



**The 16th Annual Symposium of the US Regional Association of
the International Association of Landscape Ecology**

April 25-29, 2001
Memorial Union, Arizona State University, Tempe, Arizona, USA

**Pattern, Process, Scale, and Hierarchy:
Interactions in Human-dominated and Natural Landscapes**

Program Chair: Dr. Jianguo (Jingle) Wu

Program Coordinator: Dr. Laura Musacchio

US-IALE 2001 PROGRAM AT A GLANCE

	4/25/2001	4/26/2001	4/27/2001	4/28/2001	4/29/2001
AM		Plenary Speech Oral Sessions Poster Session	Oral Sessions	Plenary Speech Oral Sessions Poster Session	Full-Day Field Trip
PM	Registration	Plenary Speech Oral Sessions Poster Session	Half-Day Field Trips	Oral Sessions Poster Session	
EVENING EVENT	Welcome Reception	US-IALE Public Meeting NASA-MSU Dinner Student Social	Banquet		

US-IALE 2001 PROGRAM OVERVIEW

APRIL 25, 2001, WEDNESDAY

4/25/01	TIME	EVENTS
MORNING	10:00 - 12:00	Organizational Meeting for Student Workers Rincon Room (Rm 225)
AFTERNOON	1:00 - 5:00	REGISTRATION Second Floor, Memorial Union, Arizona State University, Tempe, AZ Outside of the Arizona Ball Room (Room 207)
	1:00 - 6:00	Slide Preview / Computer Presentation Preview Room 208 C, Memorial Union (35mm slide projector and computer projector available) NOTE: The presentation preview room will be open from 7:30 am to 5:30 pm on April 26-28.
	1:00 - 5:30	US-IALE Executive Committee Meeting Rincon Room (Room 225), Memorial Union
	4:45 pm	A Non-IALE 2001 Event for those who are interested ASU School of Planning and Landscape Architecture Seminar, Place: AED 60 "Landscape Planning - A History of Ideas" by Dr. Carl Steinitz, Harvard University
EVENING	6:00 - 6:05	Welcome by Dr. Laura Musacchio (Program Coordinator) and Dr. Jianguo Wu (Program Chair)
	6:05 - 6:15	Welcome Speech by Dean of the College of Architecture, Dr. John Meunier
	6:15-9:00	WELCOME MIXER Place: College of Architecture and Environmental Design Architecture and Environmental Design Building (North Building, 2 nd Floor, Charlie's Café)

APRIL 26, 2001, THURSDAY

4/26/01	TIME	EVENTS			
<p>MORNING *****</p> <p>Poster Session: (April 26, 2001)</p> <p>Place: Arizona Ballroom (Room 207)</p> <p>Set-up: 7:30am-8:00am</p> <p>Duration: 8:00am-5:30pm</p> <p>Author Available: 11:00am-12:15pm 4:00pm-5:30pm</p> <p>Poster Topics: see below</p>	7:30-5:00	Registration [Second Floor, Outside of the Arizona Ball Room (Room 207), Memorial Union]			
	8:15-8:20	Opening Remarks by Program Chair , Dr. Jianguo (Jingle) Wu			Place: (Ventana - Rm 226)
	8:20-8:30	Welcome Remarks by ASU VP for Research , Dr. Jonathan Fink			
	8:30-8:40	Welcome Address by President of US-IALE , Dr. Virginia Dale			
	8:40-8:45	Welcome Remarks by Program Coordinator , Dr. Laura Musacchio			
	8:45-9:45	Plenary Address by Dr. Steward A. Pickett The Landscape Paradigm in Ecology: Heterogeneity, Hierarchy, and Humans			
	9:45-10:00	COFFEE BREAK			
		Parallel Session #1 (Pima - Rm 218)	Parallel Session #2 (Cochise - Rm 212)	Parallel Session #3 (Alumni - Rm 202)	Parallel Session #4 (Mohave - Rm 222)
	10:00-10:15	I_{AM-1} <u>Special Session:</u> Top 10 List For Landscape Ecology (I) Chair: Jianguo (Jingle) Wu	I_{AM-2} Landscape Mapping And Characterization: Methods And Applications (I) Chair: Pong Gong	I_{AM-3} <u>Special Session:</u> Landscape Fire Succession Modeling (I) Chairs: Robert Keane and Sandra Lavorel	I_{AM-4} Landscape Management: Approaches And Practices (I) Chair: Patrick A. Zollner
	10:15-10:30				
	10:30-10:45				
	10:45-11:00				
	11:00-11:15	COFFEE BREAK			
	11:15-11:30	<u>Special Session:</u> Top 10 List For Landscape Ecology (II) Chair: Jianguo (Jingle) Wu	Landscape Mapping And Characterization: Methods And Applications (II) Chair: P. Gong	<u>Special Session:</u> Landscape Fire Succession Modeling (II) Chairs: Robert Keane and Sandra Lavorel	Landscape Management: Approaches And Practices (II) Chair: Patrick A. Zollner
	11:30-11:45				
11:45-12:00					
12:00-12:15					
	12:15-1:30	LUNCH BREAK Lunch with Mentors for Grad Students (Organized by Marlene Cole and Rebecca Hess)			
<p>AFTERNOON *****</p> <p>Poster Topics: (April 26, 2001)</p> <p>8:00am-5:30pm</p> <p>1- Landscape Characterization And Pattern Analysis</p> <p>2- Scaling: Methods And Case Studies</p> <p>3- Land Use Change and Urban Ecology</p> <p>4- Landscape Pattern and Ecosystem Processes</p>	1:30-2:30	Plenary Address by Dr. Nancy Grimm and Dr. Charles Redman (Ventana - Rm 226) Pattern and process in the human-dominated landscape of central Arizona			
	2:30-2:45	COFFEE BREAK			
	2:45-3:00	I_{PM-1} <u>Special Session:</u> Top 10 List For Landscape Ecology (III) Chair: Jianguo (Jingle) Wu	I_{PM-2} Scale Effects In Landscape Analysis Chair: Richard Sutton	I_{PM-3} Vegetation Pattern And Plant-Environment Relationships Chair: Mark Dixon	I_{PM-4} Land Use And Land Cover Change: Pattern And Process (I) Chair: Morgan Grove
	3:00-3:15				
	3:15-3:30				
	3:30-3:45				
	3:45-4:00				
	4:00-4:15	COFFEE BREAK			
	4:15-4:30	I_{PM-5} <u>Special Session:</u> Scaling Issues Related To Ecological And Hydrological Landscape Analyses Chairs: Bruce Jones and Iris Goodman	I_{PM-6} <u>Special Session:</u> Pollinators In Heterogeneous And Dynamic Landscapes Chair: Nancy McIntyre	I_{PM-7} Landscape Pattern And Species Invasion And Disease Spread Chair: Cindy Huebner	Land Use And Land Cover Change: Pattern And Process (II) Chair: Tamara Shapiro
	4:30-4:45				
4:45-5:00					
5:00-5:15					
5:15-5:30					
EVENING	5:30-6:30	US-IALE General Business Meeting (Open to All Members, Ventana Room - Rm 226)			
	7:00 - 9:30	NASA-MSU Awards Dinner [Gold Room (Room 203), Memorial Union]			
	9:00 - 11:00	Student Social [Bandersnatch Brew Pub, 125 E 5 th Street, Tempe, (480) 966-4438] (Organized by Marlene Cole and Rebecca Hess)			

APRIL 27, 2001, FRIDAY

4/27/01	TIME	EVENTS				
MORNING	8:00-12:00	Registration [Second Floor, Outside of the Arizona Ball Room (Room 207), Memorial Union]				
	7:00-8:15	Landscape Ecology Editorial Board Meeting [Rincon Room (Room 225), Memorial Union]				
	8:30-9:30	Plenary Address by Dr. Orié L. Loucks (Ventana - Rm 226) Influencing the Social and Political Metabolism of Landscapes				
	9:30-9:45	COFFEE BREAK				
		Parallel Session #1 (Pima - Rm 218)	Parallel Session #2 (Cochise - Rm 212)	Parallel Session #3 (Alumni - Rm 202)	Parallel Session #4 (Mohave - Rm 222)	Parallel Session #5 (La Paz - Rm 223)
	9:45-10:00	II_{AM}-1 Landscape Pattern Analysis: Theory And Methods (I) Chair: X. Ben Wu	II_{AM}-2 <i>Special Session:</i> Assessing Current And Future Regional Vulnerabilities (I) Chair: Betsy Smith	II_{AM}-3 Pattern And Process In Urban Landscapes (I) Chair: Mark J. McDonnell	II_{AM}-4 Landscape Pattern And Ecosystem Processes (I) Chair: Jiquan Chen	II_{AM}-5 <i>Workshop:</i> The Decline Of Agricultural Landscapes In The Phoenix Metropolitan Area Chair: Laura Musacchio
	10:00-10:15					
	10:15-10:30					
	10:30-10:45					
	10:45-11:00					
	11:00-11:15	COFFEE BREAK				
	11:15-11:30	Landscape Pattern Analysis: Theory And Methods (II) Chair: X. Ben Wu	<i>Special Session:</i> Assessing Current And Future Regional Vulnerabilities (II) Chair: Betsy Smith	Pattern And Process In Urban Landscapes (II) Chair: Mark J. McDonnell	Landscape Pattern And Ecosystem Processes (II) Chair: Jiquan Chen	II_{AM}-6 <i>Workshop:</i> The Equity of Regional Open Space Conservation and Restoration Projects in the Phoenix Metropolitan Area Chair: Laura Musacchio
	11:30-11:45					
	11:45-12:00					
	12:00-12:15					
12:15 pm	LUNCH BREAK Silent Book Auction: Second Floor, Outside of the Arizona Ball Room (Room 207)					
1:00 pm	2001 US-IALE ELECTION: Ballot Box Closes at 1:00 PM [The ballot box is located at the registration table in the hall way next to Arizona Ballroom]					
AFTERNOON	1:00-5:00	Half-Day Field Trips Buses for the half-day field trips will be leaving from the dropoff area south of the College of Business Building near the corner of Lemon Street and Normal Street.				
EVENING	6:00-7:00	Banquet Reception [Place: Tempe Mission Palms Hotel, 60 East 5 th Street, Tempe]				
	7:00-9:30	BANQUET Election Results, Awards, Food, and Banquet Address by: Dr. Katherine Crewe: The Origins Of Phoenix Farming [Place: Tempe Mission Palms Hotel, 60 East 5 th Street, Tempe]				

APRIL 28, 2001, SATURDAY

4/28/01	TIME	EVENTS				
MORNING *****	8:00-12:00	Registration [Second Floor, Outside of the Arizona Ball Room (Room 207), Memorial Union]				
	7:00-8:00	US-IALE Executive Committee Meeting [Rincon Room (Room 225), Memorial Union]				
	8:30-9:30	Plenary Address by Prof. Anne Spirn (Ventana - Rm 226) Watersheds, History, Landscape Planning and Community Development: Reflections on Fifteen Years of the West Philadelphia Landscape Project				
	9:30-9:45	COFFEE BREAK				
Poster Session:		Parallel Session #1 (Ventana - Rm 226)	Parallel Session #2 (Cochise - Rm 212)	Parallel Session #3 (Alumni - Rm 202)	Parallel Session #4 (Mohave - Rm 222)	Parallel Session #5 (La Paz - Rm 223)
Place: Arizona Ballroom (Room 207) Set-up: 7:30am-8:00am Duration: 8:00am-5:30pm Author Available: 11:00am-12:15pm 4:00pm-5:30pm Poster Topics: see below	9:45-10:00	IIIAM-1 <u>Special Session:</u>			IIIAM-4	IIIAM-5
	10:00-10:15	Complexity Theory And Ecological Applications (I) Chairs: Darrel Jenerette and Jianguo Wu	IIIAM-2 <u>Special Session:</u> Landscape Ecology Comes To Town: Applied Urban Landscape Ecology (I) Chair: Jack Ahern	IIIAM-3 Landscape Pattern And Species Distribution (I) Chair: Marlene Cole	Landscape-Scale Ecological Assessment (I) Chair: Kevin McGarigal	Landscape Pattern And Biodiversity Conservation (I) Chair: Paul Hellmund
	10:15-10:30					
	10:30-10:45					
	10:45-11:00					
	11:00-11:15	COFFEE BREAK				
	11:15-11:30	<u>Special Session:</u> Complexity Theory And Ecological Applications (II) Chairs: Darrel Jenerette and Jianguo Wu	<u>Special Session:</u> Landscape Ecology Comes To Town (II) Chair: Jack Ahern	Landscape Pattern And Species Distribution (II) Chair: Marlene Cole	Landscape-Scale Ecological Assessment (II) Chair: Kevin McGarigal	Landscape Pattern And Biodiversity Conservation (II) Chair: Paul Hellmund
	11:30-11:45					
	11:45-12:00					
	12:00-12:15					
	12:15-1:30	LUNCH BREAK				
AFTERNOON ***** Poster Topics: (April 28, 2001) 8:00am-5:30pm	1:30-1:45	III PM-1 <u>Special Session:</u> The Premises And Problems With Spatial Analysis (I) Chairs: Marie-Jose Fortin and M. Miriti	III PM-2 <u>Special Session:</u> Pattern And Process In Aquatic Ecosystems (I) Chairs: Lisa Dent and E. Bennett	III PM-3 Disturbance And Vegetation Pattern And Dynamics (I) Chair: Louis Iverson	III PM-4 Land Use Planning And Landscape Architecture (I) Chair: Frederick Steiner	III PM-5 Landscape Pattern And Population Processes (I) Chair: Henriette Jager
	1:45-2:00					
	2:00-2:15					
	2:15-2:30					
	2:30-2:45	COFFEE BREAK				
	2:45-3:00	<u>Special Session:</u> The Premises And Problems With Spatial Analysis (II) Chairs: Marie-Jose Fortin and M. Miriti	<u>Special Session:</u> Pattern And Process In Aquatic Ecosystems (II) Chairs: Lisa Dent and E. Bennett	Disturbance And Vegetation Pattern And Dynamics (II) Chair: Janet Franklin	Land Use Planning And Landscape Architecture (II) Chair: Frederick Steiner	Landscape Pattern And Population Processes (II) Chair: David Howerter
	3:00-3:15					
	3:15-3:30					
	3:30-3:45					
	3:45-4:00					
4:00-4:15	COFFEE BREAK					
1- Landscape Pattern and Population Dynamics and Species Distribution 2- Landscape Conservation, Management and Design 3- Vegetation Pattern and Plant-Environment Relationships 4- Disturbance and Landscape Pattern Interactions	4:15-4:30	III PM-6 Land Use And Land Cover Change: Modeling Chair: Bryan C. Pijanowski	<u>Special Session:</u> Pattern And Process In Aquatic Ecosystems (III) Chairs: Lisa Dent and E. Bennett (Summary and Discussion led by Dent and Bennett)	Disturbance And Vegetation Pattern And Dynamics (III) Chair: Janet Franklin	Land Use Planning And Landscape Architecture (III) Chair: Frederick Steiner	Landscape Pattern And Population Processes (III) Chair: David Howerter
	4:30-4:45					
	4:45-5:00					
	5:00-5:15					
5:15-5:30						
EVENING		*** Please do not forget the full-day field trip to Grand Canyon tomorrow - April 29.				



Symposium Theme

Pattern, Process, Scale, and Hierarchy: Interactions in Human-dominated and Natural Landscapes

A major goal of landscape ecology is to understand the interactions between spatial pattern and ecological processes, the role of scale, and hierarchical linkages in heterogeneous landscapes that are increasingly shaped by human activities. This understanding is essential not only for unraveling how nature works, but also for developing a harmonious relationship between humanity and nature. In the past two decades, landscape ecologists have addressed various aspects of this goal through numerous theoretical and empirical studies. As we embark a new stage of landscape ecology in the 21st century, it is important to reflect on the advances that have been made and to identify new directions that must be taken toward this goal. Therefore, the theme of the 2001 US-IALE Symposium will be understanding the interactions among pattern, process, scale, and hierarchy in human-dominated and natural landscapes, with a special emphasis on landscapes that have been most profoundly modified by humans – the urban environment. The symposium will focus on the following topics:

- What do we know about the relationships among pattern, process, scale, and hierarchy, and how do these relationships differ between natural and human-dominated landscapes?
 - How do spatial heterogeneity and hierarchical structure affect the translations of information across scales in different landscapes, or how do we scale up pattern and process in heterogeneous landscapes?
 - How can theory and principles on pattern-process interactions, scaling, and hierarchy be applied to landscape management, landscape architecture, urban planning, and nature conservation?
 - What new technologies and methods are available for facilitating our study of the relationship among pattern, process, scale, and hierarchy, and how?
 - What role does long term ecological research play in landscape ecology, and what have we learned from the existing urban LTER studies?
 - How can natural and social sciences be more effectively integrated into landscape ecology? How can the ongoing discussion on the relationship between culture and nature influence the development of theory and practice in landscape ecology?
 - How can we effectively integrate landscape ecology with the design and planning of landscapes? What is the significance of the relationship between urbanism and landscape ecology?
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Plenary Speakers

April 26 (Thursday) Morning Plenary Session (8:15am - 9:45am)

Time: 8:45 am - 9:45 am, April 26 (Thursday), 2001
Location: Ventana Room (Memorial Union, Room 226)

The Landscape Paradigm in Ecology: Heterogeneity, Hierarchy, and Humans

Dr. Steward A. Pickett

Director of Baltimore Long-Term Ecological Research Project
Institute of Ecosystem Studies, Millbrook, NY 12545, USA

Abstract Using disparate examples of research projects that I have been involved in highlights key aspects of a framework for landscape ecology. The attempt to extract the similarities from these examples shows the ubiquity of heterogeneity, exposes some of its functional features, and helps to show the role of humans in creating and responding to heterogeneous urban and wild systems. A framework that can accommodate such a wide variety of kinds of studies recognizes 1) the kinds, frequency and configuration of elements of heterogeneity, 2) that heterogeneity is nested and scalable, 3) that determining the nature and control of flux is key to understanding heterogeneity, and 4) that a human ecosystem model can accommodate the range of individual and institutional processes in understanding ecosystems. Such a framework may serve landscape ecology well, and help inform other disciplines about the important insights of landscape ecology.

Dr. Steward T. A. Pickett received a B.S. from the University of Kentucky in 1972 and Ph.D in plant ecology in 1977 from University of Illinois at Urbana Champaign. He served on the faculty of Rutgers University until 1987 and then joined the staff of Institute of Ecosystem Studies where he currently holds the rank of Senior Scientist. His research interests encompass both conceptual and empirical studies of vegetation dynamics and natural disturbance, focusing on the mechanisms of post-agricultural vegetation development, and the role of disturbance-generated heterogeneity in the vegetation dynamics in primary forest. Studies focusing on the dynamics of ecological landscapes include experiments on the function of forest edges, the role of patchiness in diversity and productivity in the Negev Desert, and the structure and dynamics of cities as ecological systems. This last interest has led to his serving as the Director of the Baltimore Ecosystem Study, one of two urban Long-Term Ecological Research sites supported by the U.S. National Science Foundation.

Dr. Pickett has coedited five books, including the classic, *The Ecology of Patch Dynamics and Natural Disturbance* (1985, with P.S. White), *Ecological Heterogeneity* (1991, with J. Kolasa), and *Humans As Components of Ecosystems* (1993 with M.J. McDonnell). His approximately 110 scientific papers range from concerns with the structure of ecological theory, to the application of ecology to conservation, to the development of ecological approaches for studying urban areas. Dr. Pickett was elected a Fellow of the American Association for the Advancement of Science in 1992, and of the American Academy of Arts and Sciences in 1993. Contributions to the development and application of the profession of ecology include service as the inaugural Vice President for Science, Chairperson of the Membership Committee, and a member of the Council of the Ecological Society of America. He has also served on the Council of the International Association for Vegetation Science, the Science Advisory Board of the National Center for Ecological Synthesis and Analysis, the Biology Advisory Committee of the National Science Foundation, and the Board of Defenders of Wildlife.



Plenary Speakers

April 26 (Thursday) Afternoon Plenary Session (1:30pm - 2:30pm)

Time: 1:30 pm - 2:30 pm, April 26 (Thursday), 2001
Location: Ventana Room (Memorial Union, Room 226)

Pattern and process in the human-dominated landscape of central Arizona

Dr. Charles L. Redman and Dr. Nancy B. Grimm

Co-Directors of Central Arizona-Phoenix Long-Term Ecological Research Project
Arizona State University, Tempe, AZ 85287, USA

Abstract The Central Arizona-Phoenix Long-Term Ecological Research (CAP LTER) project is a multifaceted study aimed at answering the question, "How does the pattern of development of the city alter ecological conditions of the city and its surrounding environment, and vice versa?" Central to answering this question is understanding how land-use change is driven by societal decisions, how these decisions alter ecological pattern and process, and how changes in ecological conditions further influence human decision-making. Of the 24 sites funded under the nationwide LTER program, Phoenix and Baltimore are the only 2 established specifically to study urban ecosystems. The rationale for the study of human-dominated systems is three-pronged. First, humans dominate Earth's ecosystems; therefore, humans must be integrated into models for a complete understanding of ecological systems. Second, development of these more realistic models for ecological systems will lead to greater success in finding solutions to environmental problems. Third, although the study of ecological phenomena in urban environments is not a new area of science, the concept of city as ecosystem is relatively new for the field of ecology. Studying cities as ecosystems within new paradigms of ecosystem science will both raise the collective consciousness of ecologists about urban ecosystems and contribute to the further development of concepts that apply to all ecosystems. We will present background information on the central Arizona-Phoenix landscape, results from the first three years of CAP LTER research, and a conceptual basis for integration of social and ecological systems.

Dr. Nancy B. Grimm (Ph.D. 1985, Arizona State University) is Professor of Biology at Arizona State University and Co-Director of the Central Arizona-Phoenix Long-Term Ecological Research (LTER) project, a study of land use change and ecological processes in the Phoenix metropolis and surroundings. She has published more than 60 articles on diverse topics such as the biogeochemistry of nitrogen in streams and rivers, effects of natural and human-induced disturbance on stream communities and ecosystems, urban ecological systems, to interactions between linked ecosystems, such as rivers and groundwaters, watersheds and riparian zones. She has served on advisory panels and review teams for the National Science Foundation, the EPA, and the DOE, editorial boards (including *Ecology*, *Ecological Monographs*, and *Ecosystems*), as President of the North American Benthological Society, and as Chair of the Science Advisory Board for the National Center for Ecological Analysis and Synthesis.

Dr. Charles L. Redman is director of the ASU Center for Environmental Studies, and Virginia M. Ullman professor of Natural History and the Environment. Redman is trained as an archaeologist and has published eight books and numerous scholarly articles on his fieldwork in the Near East, Mediterranean and the Southwest US. He is also founding member of the Southwest Center for Education and the Natural Environment (SCENE), an officer of the state chapter of The Nature Conservancy, and an



Plenary Speakers

executive board member of the Governor's Commission on Groundwater Management. Dr. Redman has served as principal investigator or co-principal investigator on 35 research grants, from federal, state and private agencies, totaling over \$24 million. Three years ago he began co-directing the Central Arizona-Phoenix Long-Term Ecological project, and he is also co-directing the recent expansion of this urban ecological research to include an innovative interdisciplinary Ph.D. program (IGERT) sponsored by the National Science Foundation. He received his B.A. from Harvard University, and his M.A. and Ph.D. degrees in anthropology from the University of Chicago.

April 27 (Friday) Morning Plenary Session (8:30 am - 9:30 am)

Time: 8:30 am - 9:30 am, April 27 (Friday), 2001
Location: Ventana Room (Memorial Union, Room 226)

Influencing the Social and Political Metabolism of Landscapes

Prof. Orie L. Loucks

Eminent Scholar of Ecosystem Ecology
Department of Zoology, Miami University, Oxford, OH 45056, USA

Abstract This paper assumes we know about the natural processes of landscapes, including hydrologic interactions, carbon capture, secondary production, population and metapopulation dynamics, perturbation processes and ecological succession. Beyond that, we've learned much in recent years about human-generated processes that overlay natural landscapes, including land clearing, abandonment, fragmentation and recovery, conversion to commercial uses, reservoir development, irrigation, chemical enrichment of land and water, deposition of stressors, and introduction of exotic species. A further level of understanding is taking shape now. Here we need to consider how local to regional organizations, public and private, use policies or decision-making to influence the above processes. The result is a social and political integration of processes, a kind of metabolism, that is different for each landscape. Our economic and policy surveys on landscapes in the greater Columbus area of central Ohio have sought to estimate the willingness of people to pay for good stream water quality and biodiversity in the face of impending urban sprawl from Columbus into the Big Darby Creek watershed. We found the institutional influence is net-like, as well as hierarchical, capable of influencing pattern and process in both the natural and human-dominated system. Although essentially homeorhetic, however, the dynamics of this landscape system are capable of being redirected by human institutions. A second case study will illustrate why we believe financial institutions, such as the national capital markets, also can be enlisted to change human influence on the metabolism of landscapes.

Dr. Orie Loucks holds the position of Ohio Eminent Scholar in Applied Ecosystem Studies and Professor of Zoology at Miami University, Oxford, Ohio. His training includes B.Sc.F. and M.Sc. F. degrees in forestry from the University of Toronto (1953 and 1955 respectively), and a Ph.D. in botany from the University of Wisconsin-Madison in 1960. He began his career in 1955 as a Research Officer for the Department of Forestry in Canada and joined the Department of Botany at the University of Wisconsin in 1962, teaching advanced courses in ecology. From 1969 to 1973 he headed an interdisciplinary watershed study of the Lake Wingra basin, as part of the U.S. contribution to the International Biological Program. From 1976 to 1978 he served as Director of the Center of Biotic Systems in the Institute for Environmental Studies, University of Wisconsin, as well as Professor of Botany. He also headed a \$3 million interdisciplinary study of environmental impacts from a large coal-fired generating station on the Wisconsin River in central



Plenary Speakers

Wisconsin. In 1978 he joined The Institute of Ecology (TIE) in Indianapolis as Science Director and headed a series of studies concerning the regional effects of air pollutants and acidic deposition on midwest ecosystems. In 1983 Dr. Loucks became Director of the Holcomb Research Institute at Butler University in Indianapolis. From 1986 to 1991 he headed a major inter-institutional study of pollutant effects on oak-hickory forests and soils of the Ohio Valley region.

Beginning in 1990 Dr. Loucks chaired a Miami faculty study group linking the business school with the science departments, seeking a common understanding of sustainable development for undergraduate teaching. This initiative has now become the Center for Sustainable Systems Studies. In the mid-1980's Dr. Loucks was a member of the National Academy of Sciences Board on Water Science and Technology, and was U.S. Co-chair of the joint NRC-NAS/Royal Society of Canada study reviewing the 1978 Great Lakes Water Quality Agreement. He was a member of the Science Advisory Board, International Joint Commission from 1991 to 1995. From 1995 to 1997 he chaired the U.S. Vegetation Classification Panel of the Ecological Society of America and was a member of the AAAS Annual Meeting Program Committee. Dr. Loucks' public service and conservation interests are reflected in his 1960's and 70's role on the Board of Trustees, Wisconsin Chapter of The Nature Conservancy, as a member of the national Board of Governors of The Nature Conservancy from 1984 to 1994, and as a recent member of the Ohio Chapter Board of Trustees. He also serves on the Cincinnati Museum's Edge of Appalachia Advisory Committee and the Three Valleys Conservation Trust. He was honored in 1994 with the Distinguished Service Award of the American Institute of Biological Science, and this year is the recipient of the National Wildlife Federation's Conservation Achievement Award in Science.

April 27 (Friday) Evening Banquet Session (7:00 pm - 9:30 pm)

Time: 8:40 pm - 9:30 pm, April 27 (Friday), 2001
Location: Ventana Room (Memorial Union, Room 226)

The Origins Of Phoenix Farming

Dr. Katherine Crewe

School of Planning and Landscape Architecture, Arizona State University, Tempe, AZ 85287, USA

Abstract The area around Phoenix has been settled by many different farming communities over the years, from both within the country and without. Each community has brought its own customary farm practices, but adapted these to arid desert conditions. Using historic slides, this presentation traces the development of early farming, dating back from the Hohokam Indians, and including the early white settlers, then later groups following the opening of the Roosevelt Canal, growing the area's chief crops of alfalfa, cotton and citrus, but also cultivating exotic ventures such as ostrich and date farming, or specializing in cut flowers or sugar beets.

Dr. Crewe was born in South Africa, but has lived in the US for twenty years. After taking a Masters in Landscape Architecture at the University of California, Berkeley, she practiced as a landscape architect on the east coast of the US, then 1997 graduated with a Ph.D. in Landscape Architecture and Planning from the University of Massachusetts, Amherst. She is currently an assistant Professor in the School of Planning and Landscape Architecture, Arizona State University.



Plenary Speakers

April 28 (Saturday) Morning Plenary Session (8:30 am - 9:30 am)

Time: 8:30 am - 9:30 am, April 27 (Friday), 2001
Location: Ventana Room (Memorial Union, Room 226)

Watersheds, History, Landscape Planning and Community Development: Reflections on Fifteen Years of the West Philadelphia Landscape Project

Prof. Anne Whiston Spirn

School of Architecture and Planning, MIT, Cambridge, MA 02139, USA

Abstract This paper describes the West Philadelphia Landscape Project as a laboratory for developing and testing theories of urban landscape change, planning, and management since 1987. It relates how processes of development, settlement, migration and disinvestment have interacted with natural processes such as water flow to produce landscapes of poverty. It summarizes discoveries (such as the high correlation in many inner-city neighborhoods between vacant land and buried floodplains) and projects (such as the transformation of low-lying vacant land into a landscape amenity and stormwater detention facility, thereby rebuilding a neighborhood, reducing combined sewer overflows, and improving regional water quality). The paper summarizes the results of this research-in-action, sets that work within the context of broader issues in urban and environmental policy, and reflects on lessons for the theory and practice of landscape ecology and landscape planning and management.

Prof. Anne Whiston Spirn is Professor of Landscape Architecture and Planning at MIT. She received the A.B. from Harvard University and the M.L.A. from the University of Pennsylvania. Before coming to MIT, Spirn taught at the University of Pennsylvania and Harvard. Prior to teaching, Spirn worked at Wallace McHarg Roberts and Todd on diverse projects, including plans for Woodlands New Community in Houston, the Toronto Central Waterfront, and a comprehensive plan for Sanibel, Florida. Her first book, The Granite Garden: Urban Nature and Human Design, won the President's Award of Excellence from the American Society of Landscape Architects. The Language of Landscape (Yale 1998), extends the ideas presented in The Granite Garden and argues that the language of landscape exists with its own grammar and metaphors. Since 1984 she has worked in inner-city neighborhoods on landscape planning and community design and development. She is director of the West Philadelphia Landscape Project, a program that integrates teaching, research, and community service, which has been featured in professional journals, newspaper articles, national radio and television broadcasts, and international conferences and symposia. WPLP was recognized as a model project by the White House Millennium Council in 1999.



US-IALE 2001 Program

April 25 (Wednesday) Events

MORNING

10:00-12:00 Organizational Meeting for Student Workers, Rincon Room (MU Room 225)

AFTERNOON

1:00 - 5:00 **REGISTRATION**
Second Floor, Memorial Union, Arizona State University, Tempe, AZ
Outside of the Arizona Ball Room (Room 207)

1:00 - 6:00 **Slide Preview / Computer Presentation Preview**
Room 208 C, Memorial Union (35mm slide projector and computer projector available)

1:00 - 5:30 **US-IALE Executive Committee Meeting**
Rincon Room (Room 225), Memorial Union

4:45 pm A Non-IALE 2001 Event for those who are interested

ASU School of Planning and Landscape Architecture Seminar:
"Landscape Planning - A History of Ideas" by Dr. Carl Steinitz, Harvard University

Place: AED 60

EVENING

6:00 - 6:05 Welcome by Dr. Laura Musacchio (Program Coordinator) and Dr. Jianguo Wu (Program Chair)

6:05 - 6:15 **Welcome Speech** by Dean of the College of Architecture, Dr. John Meunier

6:15 - 9:00 **WELCOME MIXER**
College of Architecture and Environmental Design, Architecture and Environmental Design Building (North Building) [2nd Floor, Charlie's Café]



US-IALE 2001 Program

April 26 (Thursday) Morning Plenary Session (8:15am - 9:45am)

Chair: **Dr. Jianguo (Jingle) Wu**, Arizona State University

Location: Ventana Room (Memorial Union, Room 226)

8:15-8:20 Opening Remarks by Program Chair, **Dr. Jianguo (Jingle) Wu**

8:20-8:30 Welcome Remarks by Vice Provost for Research, ASU, **Dr. Jonathan Fink**

8:30-8:40 Welcome Address by President of US-IALE, **Dr. Virginia Dale**

8:40-8:45 Welcome Remarks by Program Coordinator, **Dr. Laura Musacchio**

8:45-9:45 Plenary Address by **Dr. Steward A. Pickett**, Institute of Ecosystem Studies, Millbrook, NY 12545, USA:

The Landscape Paradigm in Ecology: Heterogeneity, Hierarchy, and Humans

9:45-10:00 COFFEE BREAK



April 26 (Thursday) Morning - Concurrent Session #1

Special Session **Top 10 List for Landscape Ecology in the New Century**

(I_{AM}-1):

Chairperson: **Jianguo (Jingle) Wu**, Arizona State University

Location: Pima Room (MU Room 218)

- 10:00-10:15 Wu, Jianguo. Department of Life Sciences, Arizona State University, West Campus, Phoenix, AZ 85069, USA. **Top 10 List for Landscape Ecology in the 21 Century: Introduction.**
- 10:15-10:30 Naveh, Zev. Technion, Israel Institute of Technology, Haifa, Israel. **Naveh's Top 10 List for Landscape Ecology in the 21 Century.**
- 10:30-10:45 Forman, Richard T. T. Harvard University, Graduate School of Design, Cambridge, MA 02138, USA. **Impact Opportunities for Landscape Ecology in the Twenty-aughts.**
- 10:45-11:00 Farina, Almo. Faculty of Environmental Sciences, The Urbino University, Urbino, Italy. **Landscape Ecology acting in the real world, priorities and strategies.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Barrett, Gary W. and Terry L. Barrett, Institute of Ecology, University of Georgia, Athens, Georgia 30602, USA. **Landscape Ecology in the 21st Century: from Youth to Maturity.**
- 11:30-11:45 Ahern, Jack. Department of Landscape Architecture an Regional Planning, University of Massachusetts, Amherst, MA 01003, USA. **Full Circle: challenges for the integration of the science and the application of landscape ecology.**
- 11:45-12:00 Baker, William L. Department of Geography and Recreation, University of Wyoming, Laramie, WY 82071, USA. **Landscape ecology in the 21st century: A view from the Rocky Mountains.**
- 12:00-12:15 King, Anthony W. Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6335, USA. **Top Ten Challenges for Landscape Ecology: A Middle-Number Systems Perspective.**



April 26 (Thursday) Morning - Concurrent Session #2

Regular Session Landscape Mapping and Characterization: Methods and Applications (I_{AM}-2):

Chairperson: Pong Gong, University of California, Berkeley

Location: Cochise Room (MU Room 212)

10:00-10:15 Gong¹, P., Y. Sheng¹, B. Xu¹, L. Wang¹, G. S. Biging¹, Y. Wang², Y.-P. Hsieh³,
¹Center for Assessment and Monitoring of Forest and Environmental Resources, University of California, Berkeley, CA 94720, USA; ²Department of Geological Sciences, Florida State University, Tallahassee, FL 32306, USA; ³Wetland Ecology, Center for Water Quality, Florida A&M University, Tallahassee, FL 32307, USA. **Photo-ecometrics for landscape characterization.**

10:15-10:30 Rollins, Matthew, and Robert Keane, Fire Sciences Laboratory, Rocky Mountain Research Station, United States Forest Service, Missoula, Montana 59807, USA. **Remote sensing and gradient modeling for ecosystem management.**

10:30-10:45 Arge¹, Lars, Jeff Chase¹, Laura Toma^{1*}, Jeffrey Vitter¹, Rajiv Wickremesinghe¹, Pat Halpin², and Dean Urban². ¹Levine Science Research Center, Computer Science Department, Duke University, Durham, NC 27708, USA; ²Nicholas School of the Environment, Duke University, Durham, NC 27708, USA. **Digital terrain analysis for massive grids.**

10:45-11:00 Kupfer¹, John, and Scott Franklin². ¹Department of Geography and Regional Development, University of Arizona, Tucson, AZ 85721, USA; ²Department of Biology, University of Memphis, Memphis, TN 38152, USA. **Evaluation of an Ecological Land Type Classification System, Natchez Trace State Forest, Western Tennessee, USA.**

11:00-11:15 COFFEE BREAK

11:15-11:30 Hargrove, William W., and Forrest M. Hoffman. Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA. **Multivariate Ecoregions of the United States: A Statistical Delineation.**

11:30-11:45 Hoffman, Robin. Faculty of Landscape Architecture, SUNY College of Environmental Science and Forestry, Syracuse, NY 13210, USA. **Application of Computer Visualizations in the Investigation of Alternate Forest Management Practices.**



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- 11:45-12:00 Song, B¹, P. Zollner², D. J. Mladenoff¹, Eric Gustafson², H. S. He³, and V. C. Radeloff¹. ¹Department of Forest Ecology and Management, University of Wisconsin, Madison, WI 53706, USA. ²North Central Research Station, 5985 Highway K, Rhinelander, WI, USA. ³School of Natural Resources, University of Missouri, Columbia, MO, USA. **3-D Visualization of Management Alternatives on the Chequamegon National Forest.**
- 12:00-12:15 Bolliger¹, Janine, Erik V. Nordheim², and David J. Mladenoff³. ¹Department of Forest Ecology and Management, University of Wisconsin, Madison, WI, 53706, USA; ²Department of Statistics and Department of Forest Ecology and Management, University of Wisconsin, Madison, WI, 53706, USA; ³Department of Forest Ecology and Management, University of Wisconsin, Madison, WI, 53706, USA. **A probabilistic and spatially explicit method to assign individual tree species to ambiguously identified trees in Historical Land Office Surveys.**

April 26 (Thursday) Morning - Concurrent Session #3

Special Session Landscape Fire Succession Modeling

(I_{AM}-3):

Chairpersons: **Robert Keane**¹ and **Sandra Lavorel**², ¹USDA Forest Service, Rocky Mountain Research Station, Missoula, MT 59807, USA; ²CEFE - CNRS UPR 9056, France.

Location: Alumni Room (MU Room 202)

- 10:00-10:15 Keane, R.E. and R. Parsons. USDA Forest Service Fire Sciences Laboratory, Missoula, MT 59807, USA. **Limitations of the Simulation Approach to Estimate Historical Range and Variation of Landscape Patch Dynamics.**
- 10:15-10:30 Chew, Jimmie D., USDA Forest Service, Rocky Mountain Research Station, Missoula, MT 59807, USA. **Integrating the Simulation of Disturbance Processes at Landscape Scales.**
- 10:30-10:45 Li, Chao. Northern Forestry Centre, Canadian Forest Service, Edmonton, Alberta, Canada T6H 3S5. **Landscape Structure Based Simulation of Natural Fire Regimes.**
- 10:45-11:00 Yemshanov, Dennis and Ajith H. Perera. Ontario Forest Research Institute, 1235 Queen St. E., Sault Ste. Marie, P6A 2E5, ON, Canada. **Modelling boreal forest landcover dynamics after fire disturbance: a Markovian approach.**



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- 11:00-11:15** **COFFEE BREAK**
- 11:15-11:30 Andison, David W. Bandaloo Landscape-Ecosystem Services, 3426 Main Ave., Vancouver, BC, Canada. **Practical Science using the LANDMINE Landscape Fire Simulation Model.**
- 11:30-11:45 McGarigal¹, Kevin, William Romme², Edward Roworth¹, and Michele Crist¹.
¹Department of Natural Resources Conservation, University of Massachusetts, Amherst, MA 01003, USA; ²Biology Department, Fort Lewis College, Durango, CO 81301, USA. **Rocky Mountain Landscape Simulator (RMLANDS): Characterizing the expected range of variation in landscape structure and function.**
- 11:45-12:00 McKenzie, Donald, Amy E. Hessl, Susan Prichard, and David L. Peterson. Cascadia Field Station, Box 352100, University of Washington. Seattle, WA 98195, USA. **Linking multi-scale empirical approaches to process-based models of fire and succession.**
- 12:00-12:15 Keane¹, R.E., and S. Lavorel². USDA Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory. P.O. Box 8089, Missoula, MT 59807, USA; ²CEFE - CNRS UPR 9056, 1919 Route de Mende, 34293 Montpellier Cedex 05, France. **A classification of landscape fire succession models: Presentation and Discussion.**

April 26 (Thursday) Morning - Concurrent Session #4

Regular Session Landscape Management: Approaches and Practices

(I_{AM}-4):

Chairperson: **Patrick A. Zollner**, USDA Forest Service, North Central Research Station, Rhinelander, WI 54501, USA.

Location: Mohave Room (MU Room 222)

- 10:00-10:15 Zollner¹, Patrick A., Eric J. Gustafson¹, S. He Hong², and David J. Mladenoff³
¹USDA Forest Service, North Central Research Station, Rhinelander, WI 54501; ²University of Missouri, Department of Forestry, Columbia, MO 65211. ³University of Wisconsin Madison, Department of Forest Ecology and Management, Madison, WI 53706. **Modeling the Influence of Dynamic Zoning on Forest Composition in the Northern Lake States.**
- 10:15-10:30 Adair, William A., and John A. Bissonette. USGS Utah Cooperative Fish and



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- Wildlife Research Unit, Department of Fisheries and Wildlife, Utah State University, 5210 Old Main Hill, Logan, UT 84322-5210, USA. **Spatially explicit models and landscape planning: A case study with the endangered Newfoundland marten (*Martes americana atrata*).**
- 10:30-10:45 Nielsen, Clayton K., and Alan Woolf. Cooperative Wildlife Research Laboratory and Department of Zoology, Southern Illinois University at Carbondale, Mailcode 6504, Carbondale, IL 62901, USA. **Considering Landscape Physiognomy in Studies of Habitat Use-availability.**
- 10:45-11:00 Green, Glen M. and Laura A. Carlson*, Center for the Study of Institutions, Population, and Environmental Change (CIPEC), Indiana University, Bloomington, IN 47408, USA. **Control of forest distribution by biogeophysical and social/institutional factors: Does conservation management make a difference?**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Haire, Sandra L. USGS-Biological Resources Division, Fort Collins, CO 80525, USA. **Landscape ecology as an integrative science: An application in the Greater Yellowstone Ecosystem.**
- 11:30-11:45 ~~Poiani¹, Karen, Kent Gilges², Ayn Shlisky¹, and Jeff Hardesty³. ¹The Nature Conservancy, Department of Natural Resources, Cornell University, Ithaca, NY 14853, USA; ²The Forest Bank, Center for Compatible Economic Development, The Nature Conservancy, Rochester, NY 14604; and ³The Nature Conservancy, Department of Botany, University of Florida, Gainesville, FL 32611, USA. **Compatible Forest Management, Conservation, and Landscape Ecology: A Forest Management Network.** (CANCELLED)~~
- 11:45-12:00 Brooks, Kerry, and Michael Bishopp. GIS and Simulation Laboratory, Interdisciplinary Design Institute and Department of Horticulture and Landscape Architecture, Washington State University-Spokane, Spokane, WA 99202, USA. **Evaluating Conflicts and Costs Associated with Proposed Landscape-based Salmon Habitat Protection Measures.**
- 12:00-12:15 Tanizaki, K.F. and R.P.F. Pedrosa. Ecology Sector/DBAV/ Universidade do Estado do Rio de Janeiro, São Francisco Xavier, 524/PHLC sala220, Maracanã - Rio de Janeiro; Brazil. **Establishing priorities for conservation and management in the Atlantic Coastal Forests: Case study of Rio de Janeiro State, Brazil.**



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12:15 - 1:30pm: **Lunch with Mentors for Grad Students Organized by US-IALE Student Reps: Marlene Cole and Rebecca Hess**

April 26 (Thursday) Afternoon Plenary Session (1:30pm - 2:30pm)

Chair: **Dr. Jianguo (Jingle) Wu**, Arizona State University

Location: Ventana Room (Memorial Union, Room 226)

1:30 - 2:30 Plenary Address by **Dr. Charles L. Redman** and **Dr. Nancy B. Grimm**, Arizona State University, Tempe, AZ 85287, USA:

Pattern and process in the human-dominated landscape of central Arizona

2:30 - 2:45 COFFEE BREAK

April 26 (Thursday) Afternoon - Concurrent Session #1

Special Session (I_{PM}-1): **Top 10 List for Landscape Ecology in the New Century** (continued from AM)

Chairperson: **Jianguo (Jingle) Wu**, Arizona State University

Location: Pima Room (MU Room 218)

2:45-3:00 Mladenoff, David J. Department of Forest Ecology and Management, University of Wisconsin, Madison, Wisconsin 54706, USA. **Challenges for Landscape Ecology.**

3:00-3:15 Dale, Virginia H. Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831-6036, USA. **Top Ten Landscape Ecology Issues for the Next Millennium.**

3:15-3:30 Wiens, John A., National Center for Ecological Analysis and Synthesis, University of California Santa Barbara, Santa Barbara, CA 93101 and Department of Biology, Colorado State University, Fort Collins, CO 80523.



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Looking Ahead by Looking Back: What are the Central Issues of Landscape Ecology?

3:30-3:45 Wu, Jianguo (Conveyor). Department of Life Sciences, Arizona State University, Phoenix, AZ 85069, USA. **Top 10 Lists for Landscape Ecology from M. Anthrop, R. J. Hobbs, S. A. Levin, Arthur S. Lieberman, R. V. O'Neill and M. G. Turner.**

3:45-4:00 Questions for all speakers

4:00-4:15 COFFEE BREAK

Special Session (I_{PM}-5): Scaling Issues Related to Ecological and Hydrological Landscape Analyses

Chairperson: **Bruce Jones** and **Iris Goodman**, U.S. Environmental Protection Agency, Landscape Ecology Branch, Las Vegas, Nevada 89193, USA

Location: Pima Room (MU Room 218)

4:15-4:30 Berk¹, Richard, Jan de Leeuw¹, Richard Ambrose², and Cindy Lin².
¹Department of Statistics, University of California - Los Angeles, CA 90095-1554, USA ; ²Department of Environmental Science and Engineering, School of Public Health, University of California - Los Angeles, CA 90095-1554, USA. **Multilevel Statistical Modeling for Generalizing from Case Studies.**

4:30-4:45 Mueller, Felix and Ernst-Walter Reiche. Ecology Center, University of Kiel, Schauenburgerstrasse 112, D 24118 Kiel, Germany. **Ecological gradients as hierarchical indicators of ecosystem and landscape integrity.**

4:45-5:00 Chen, Grace F. Department of Geography, The University of Iowa, Iowa City, IA 52242, USA. **Relating Landscape Patterns to Hydrological Processes in a Watershed Hierarchy.**

5:00-5:15 Jennings, David B. and S. Taylor Jarnagin*. U.S. Environmental Protection Agency, NERL/LEB, Environmental Photographic Interpretation Center, Reston, VA 20192, USA. **Impervious Surfaces and Streamflow Discharge: A Historical Remote Sensing Perspective in a Northern Virginia Subwatershed.**

5:15-5:30 Cardille¹, Jeffrey A., Jonathan A. Foley¹, Marcos Heil Costa². Center for Sustainability and the Global Environment, University of Wisconsin, Madison,



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WI 53706, USA; ²Department of Agricultural Engineering, Federal University of Viçosa, Viçosa, MG, Brazil. **Scaling Down Successfully: A New Method For Integrating Census and Satellite Data**

April 26 (Thursday) Afternoon - Concurrent Session #2

Regular Session **Scale Effects in Landscape Analysis**

(I_{PM}-2):

Chairperson: **Richard Sutton**, Agronomy and Horticulture, UN-Lincoln Lincoln, NE 68583, USA

Location: Cochise Room (MU Room 212)

- 2:45-3:00 Sutton, Richard K. Agronomy and Horticulture, UN-Lincoln Lincoln, NE 68583-0724, USA. **Effects of Grain, Extent and Scale in a Hierarchical Test on Mystery, Legibility and Preference in Rural Landscapes.**
- 3:00-3:15 Qi, Ye. Department of Environmental Science, Policy and Management, University of California, Berkeley, CA 94720-3310, USA; **Estimating Species Richness by Family: Does Scale Matter?**
- 3:15-3:30 Schulte, Lisa A., and David M. Mladenoff. Department of Forest Ecology and Management, University of Wisconsin, Madison, WI 53706, USA. **Effect of scale on the study of pattern and process in a historical landscape.**
- 3:30-3:45 Thompson, Craig M., and Kevin McGarigal. Department of Natural Resource Conservation, University of Massachusetts, Amherst, MA, 01003-4210, USA. **Effects of Scale on Bald Eagle (*Haliaeetus leucocephalus*) Habitat Selection along the lower Hudson River.**
- 3:45-4:00 Xu, Ming, Qinghua Guo, and Ye Qi. Department of ESPM, University of California, CA 94720, USA. **Detecting spatial patterns in a young ponderosa pine plantation using 0.5 m resolution digital imagery.**
- 4:00-4:15 COFFEE BREAK**

Special Session **Pollinators in Heterogeneous and Dynamic Landscapes**

(I_{PM}-6):



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- Chairperson:** Nancy McIntyre, Department of Biological Sciences, Texas Tech University, Lubbock, TX 79409, USA
- Location:** Cochise Room (MU Room 212)
- 4:15-4:30 McIntyre¹, Nancy, and Mark Hostetler². ¹Department of Biological Sciences, Texas Tech University, Box 43131, Lubbock, TX 79409-3131, USA; and ²Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, FL 32611-0430, USA. **Effects of Urban Land Use on Pollinator Communities in a Desert Metropolis.**
- 4:30-4:45 Turner¹, S. J., and A.R. Johnson². ¹The Department of Biological Sciences, St. Cloud State University, St. Cloud, MN 56301, USA; ²The Department of Environmental Toxicology, Clemson University, 509 Westinghouse Road, Pendleton, SC 29670, USA. **Fragmented Native Populations in Agricultural Landscapes: The Case of an Orchid and its Pollinators.**
- 4:45-5:00 Reed, Catherine C. Entomology Department, University of Minnesota, St. Paul, MN 55108, USA. **Native Bee Species Persistence and Recolonization on Midwestern Prairie Fragments.**
- 5:00-5:15 Waser, Nickolas M. Department of Biology, University of California, Riverside CA 92521, USA. **Isolation and low density: two effects of fragmentation on plant populations, and their implications for pollination by animals.**
- 5:15-5:30 Silbernagel¹, Janet, and T.F.H. Allen². ¹Department of Landscape Architecture, University of Wisconsin, Madison, WI 53706, USA; ²Department of Botany, University of Wisconsin, Madison, WI 53706, USA. **Negotiating the Cultural Landscape as a Bumblebee: Complex Foraging Behavior and Levels of Organization.**

April 26 (Thursday) Afternoon - Concurrent Session #3

Regular Session **Vegetation Pattern and Plant-Environment Relationships**
(**I_{PM}-3**):

Chairperson: Mark Dixon, Department of Zoology, University of Wisconsin, Madison, WI 53706, USA

Location: Alumni Room (MU Room 202)



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- 2:45-3:00 Dixon, Mark and Monica Turner. Department of Zoology, University of Wisconsin, Madison, WI 53706, USA. **Modeling the Effects of Flow Variation on Recruitment Dynamics of Riparian Trees.**
- 3:00-3:15 Hess¹, Rebecca S. and Thomas A. Spies². ¹Department of Forest Science, Oregon State University, Corvallis, OR 97331, USA; and ²USDA Forest Service, Pacific Northwest Research Station, Corvallis, OR, 97331, USA. **Snag and Down Wood Patterns in Forests of the Coast Range of Oregon.**
- 3:15-3:30 Lookingbill, Todd, Kenneth Pierce and Dean Urban. Nicholas School of the Environment, Duke University, Durham, NC 27708, USA. **Temperature in Montane Systems: Testing DEM-derived Proxies with Field Data.**
- 3:30-3:45 McDonald¹, Robert I., Robert K. Peet², and Dean L. Urban³. ¹Nicholas School of the Environment, Box 90328, Duke University, Durham, NC 27708, USA; ²Department of Biology, Box 3280, University of North Carolina, Chapel Hill, NC 27599, USA; and ³Nicholas School of the Environment, Box 90328, Duke University, Durham, NC 27708, USA. **Landscape Impacts on Oak Decline and Red Maple Increase.**
- 3:45-4:00 Bunn¹, Andrew G., Dean L. Urban², Lisa J. Graumlich¹. ¹Mountain Research Center, Montana State University, Bozeman, MT, USA; ²Nicholas School of the Environment, Duke University, Durham, NC, USA. **Fine Scale Variability in the Physical and Biotic Templates of 3 Alpine Treelines.**
- 4:00-4:15 COFFEE BREAK**

Regular Session Landscape Pattern and Species Invasion and Disease Spread

(I_{PM}-7):

Chairperson: **Cindy Huebner**, USDA Forest Service, Northeastern Research Station, Morgantown, WV 26505, USA

Location: Alumni Room (MU Room 202)

- 4:15-4:30 Huebner, Cynthia D. USDA Forest Service, Northeastern Research Station, Morgantown, WV 26505, USA. **Invasive Plant Species in Eastern Oak-Hickory Forests: Actual and Potential Landscape Impacts.**
- 4:30-4:45 Glenn, Susan. Forest Sciences Department, University of British Columbia, Vancouver, B.C., V4K 3C9, Canada. **Responses of Grassland/Forest Boundaries to Surprising Changes in Climate in Central British Columbia,**



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Canada.

- 4:45-5:00 Hatfield, Colleen A. Department of Ecology, Evolution and Natural Resources, Rutgers University, New Brunswick, NJ 08901, USA.
Discontinuities in habitat features inhibit the spread of exotic species.
- 5:00-5:15 Bickel¹, Kathryn A., Laura C. Philips², and Dean L. Urban³. ¹Nicholas School of the Environment, Duke University, Box 90328, Durham, NC 27708-0328, USA; ²Department of Biology, University of North Carolina at Chapel Hill, Box 3280, Chapel Hill, NC 27599, USA; ³Nicholas School of the Environment, Duke University, Box 90328, Durham, NC 27708-0328, USA. **Land use, Disturbance, and the Spread of Non-native Plant Species in a Piedmont Forest Ecosystem.**
- 5:15-5:30 Nicholson¹, Matthew and Thomas Mather². ¹Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, IL 62901, USA; ²Center for Vector-Borne Disease, University of Rhode Island, Kingston, RI 02881, USA. **Spatial and Temporal Trends in Deer Tick Abundance: Implications for Human Lyme Disease Risk.**

April 26 (Thursday) Afternoon - Concurrent Session #4

Regular Session Land Use and Land Cover Change: Pattern and Process

(I_{PM}-4):

Chairperson: J. Morgan Grove¹ (2:45-4:00 pm) and Tamara Shapiro² (4:15-5:30 pm).
¹USDA Forest Service, 705 Spear Street, South Burlington, VT 05403, USA;
²Department of Landscape Architecture, Rutgers University, New Brunswick, NJ 08901, USA.

Location: Mohave Room (MU Room 222)

- 2:45-3:00 Shapiro, Tamara¹, Emily W.B. Russell², and Jean Marie Hartman³.
¹Department of Landscape Architecture, Rutgers University, New Brunswick, NJ 08901, USA; ²Department of Geologic Sciences, Rutgers University, Newark, NJ 07102, USA; and ³Department of Landscape Architecture, Rutgers University, New Brunswick, NJ 08901, USA. **Forces of Environmental Change in the Hackensack Meadowlands: A Historic Analysis.**
- 3:00-3:15 McConnell, William J. Indiana University, Bloomington, IN 47405, USA.
Human-Environment Relations in Madagascar: The importance of spatial and temporal perspective.



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- 3:15-3:30 Binford¹, M.W., C. Leslie², R. Britts¹, G. Barnes², H. L. Gholz³, S.E. Smith².
¹Department of Geography; ²Geomatics Program, Department of Civil Engineering, ³School of Forest Resources and Conservation, University of Florida, Gainesville, FL 32611. **Decadal-Scale Spatial Dynamics of Land Cover, Land Ownership, Land Management in Industrial and Non-industrial Forests in the Southeastern Coastal Plain Region of the U.S.**
- 3:30-3:45 Lioubimtseva, Elena. Department of Geography and Planning, Grand Valley State University, Allendale, MI 49401, USA. **Monitoring Changes in Arid Landscapes of Central Asia.**
- 3:45-4:00 Hockner¹, Tom, Jim Newman², Jeffrey Jones³, Mark Brown⁴, Joseph Delfino⁵, Michael Binford⁶, ¹Department of Urban and Regional Planning, University of Florida, Gainesville, FL, 32611, USA; ²Pandion Systems, Inc., Gainesville, FL 32611, USA; ³East Central FL Regional Planning Council, Maitland, FL 32751, USA; ⁴Department of Environmental Engineering, University of Florida, Gainesville, FL 32611, USA, Department of Environmental Engineering, ⁶Department of Geography, University of Florida, Gainesville, FL 32611, USA. **Assessing Impacts of Incremental Landscape Changes on the Wekiva River Ecosystem: A Dynamic Urban Ecology Model.**
- 4:00-4:15 COFFEE BREAK**
- 4:15-4:30 Nagendra, Harini, Southworth, Jane, and Tucker, Catherine M. Center for Study of Institutions, Population, and Environmental Change, Indiana University, Bloomington, IN 47408, USA. **Using landscape metrics to interpret trajectories of land cover change: A case study in Western Honduras.**
- 4:30-4:45 Nugranad¹, Jarunee, Peter August², Daniel Civco³, Y. Q. Wang². ¹Remote Sensing Division, National Research Council of Thailand, 196 Paholyothin Road, Chatuchak, Bangkok 10900, Thailand; ²Department of Natural Resources Science, University of Rhode Island, Kingston, RI 02881, USA; ³Department of Natural Resources Management and Engineering, University of Connecticut, Storrs, CT 06269, USA. **Biophysical and Socio-economic Correlates of Land Cover in the Mae Taeng Watershed of Northern Thailand.**
- 4:45-5:00 Batistella¹, Mateus, and Fabio de Castro². ¹Indiana University-ACT, Bloomington, IN 47405, USA; ²NEPAM-UNICAMP, Campinas, SP 13081-970, Brazil. **Institutional design and landscape fragmentation: a comparative study of rural colonization projects in the Brazilian Amazon.**
- 5:00-5:15 Fernandez, Luis E. School of Natural Resources and Environment, University Of Michigan, Ann Arbor, MI 48109-1115, USA. **Modeling the Agents of**



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Tropical Deforestation: Integrating Social Survey Data into Spatial Models of Land Use Change on the Atlantic Coast of Nicaragua (1959-1996).

5:15-5:30

Zebisch¹, Marc, Hartmut Kenneweg¹, Valentina Krysanova², and Frank Wechsung². ¹Institute for Landscape Development, Technical University Berlin, Germany; ²Potsdam Institute for Climate Impact Research, Germany.
Landscape responses to external driving forces in Brandenburg, Germany.

April 26 (Thursday) Poster Session (8:00am - 5:30pm)

Place: Arizona Ballroom (Room 207)
Set-up time: 7:30am - 8:00am
Duration: 8:00am - 5:30pm
Author Available for questions: 11:00am - 12:15pm and 4:00pm - 5:30 pm

Landscape Characterization and Pattern Analysis

- P#I-1** Camelo-de-Castro, Ernesto. Department of Plant Biology, Arizona State University, Tempe, AZ 85287, USA. **Landsat MSS and TM Data Preparation for Vegetation Cover Change Analysis: Evaluation on a Cerrado Environment in Mato Grosso, Brazil.**
- P#I-2** Chen, Jiquan¹, Eugenie Euskirchen¹, Tom Hayes², Siyan Ma¹, Treneice Marshall¹, and Sari Saunders¹. ¹School of Forestry & Wood Products, Michigan Technological University, Houghton, MI 49931, USA; ²University of California, Berkley, CA 94720, USA. **Are Edge Effects More Pronounced at Edges?**
- P#I-3** Chen, Yufu, Ming Dong. Institute of Botany, Chinese Academy of Sciences, Beijing 100093, P.R.China. **Quantifying spatial pattern of a sandy landscape in northern China by lacunarity analysis.**
- P#I-4** da Costa Gurgel¹, Helen, Nelson Jesus Ferreira². ¹INPE - Instituto Nacional de Pesquisas Espaciais, Caixa Postal 515 - 12201-097 - São José dos Campos - SP, Brazil; ²INPE - Instituto Nacional de Pesquisas Espaciais Caixa Postal 515 - 12201-097 - São José dos Campos - SP, Brazil. **Spatial and Temporal Variability of NDVI over Brazil and its Connections with the Climate.**
- P#I-5** Helmer, E. H., Olga Ramos, Tania del Mar Lopez, Maya Quiñones and Wilmari Diaz. International Institute of Tropical Forestry, USDA Forest Service, P.O. Box 25000, Río Piedras, Puerto Rico, USA. **Mapping forest type and land use of a**



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biodiversity hotspot.

- P#I-6** Hudak¹, Andrew, Janet Ohmann¹, Matt Gregory¹, Melinda Moeur¹, Michael Lefsky², and Warren Cohen¹. ¹Pacific Northwest Research Station, U.S. Forest Service; and ²Department of Forest Science, College of Forestry, Oregon State University, Corvallis, OR, USA. **Comparison of Two Methods to Map Forest Structure from Inventory Plot and Environmental Data in Western Oregon.**
- P#I-7** Kirkpatrick¹, Lee Anne, and John F. Weishampel². ¹Liberal Studies Program and ²Department of Biology, University of Central Florida, Orlando, FL 32816-2368, USA. **Quantifying structure in volumetric neutral landscapes.**
- P#I-8** Townsend, Philip A., Robert A. Chastain, Brian R. Sturtevant, and Steven W. Seagle. Appalachian Laboratory, University of Maryland Center for Environmental Science, 301 Braddock Road, Frostburg, MD 21532, USA. **Characterization of forest vertical structure for landscape studies.**
- P#I-9** Wu¹, X. Ben, and Daniel Z. Sui². ¹Department of Rangeland Ecology and Management, Texas A&M University, College Station, TX 77843, USA; ²Department of Geography, Texas A&M University, College Station, TX 77843, USA. **Exploring urban residential segregation using a lacunarity-based measure.**

Scaling: Methods and Case Studies

- P#I-10** Bossenbroek¹, Jonathan M., Helene H. Wagner¹, Michelle M. Hawks¹, John A. Wiens², Beatrice Van Horne¹. ¹Biology Department, Colorado State University, Ft. Collins, CO 80523, USA; ²National Center for Ecological Analysis and Synthesis, Santa Barbara, CA 93101-3351, USA. **Scale dependency from Colorado to Kansas: How the environment and the beetles come together.**
- P#I-11** ~~Hawks, Michelle M., Helene H. Wagner, Jonathan M. Bossenbroek, John A. Wiens, and Beatrice Van Horne. Department of Biology, Colorado State University, Fort Collins, CO 80521, USA. **Multi-scale Analysis of Butterflies Response to Environmental Factors Using Causal Modeling.** (CANCELLED)~~
- P#I-12** Li¹, Harbin, Zhengquan Wang², and Carl C. Trettin¹. ¹USDA Forest Service, Southern Research Station, Charleston, SC 29414, USA; ²College of Forest Resources and Environment, Northeast Forestry University, Harbin, Heilongjiang 150040, P.R. China. **Scaling up Carbon Estimates in Peat Soils: Sources and Consequences of Uncertainty.**
- P#I-13** Ohmann¹, Janet L., and Matthew J. Gregory². ¹USDA Forest Service, Pacific Northwest Research Station, Corvallis, OR 97330, USA; ²Department of Forest



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Science, Oregon State University, Corvallis, OR 97330, USA. **Alternative approaches for scaling up fine-resolution, mapped vegetation data for regional analysis.**

- P#I-14** Schooley¹, Robert L., and John A. Wiens^{1,2}. ¹Department of Biology, Colorado State University, Fort Collins, CO 80523, USA; ²National Center for Ecological Analysis and Synthesis, Santa Barbara, CA 93101, USA. **Predicting the Distribution and Abundance of a Habitat Specialist: Grain Size and Spatial Effects.**
- P#I-15** Wagner, Helene H.¹, Jonathan M. Bossenbroek¹, Michelle M. Hawks¹, Beatrice Van Horne¹, and John A. Wiens². ¹Department of Biology, Colorado State University, Fort Collins, CO 80523, USA; ²National Center for Ecological Analysis and Synthesis, Santa Barbara, CA 93101, USA. **Spatial covariance in plant communities: An integration of variogram modeling, multi-scale ordination and the testing for assembly rules.**
- P#I-16** ~~Wiens¹, John A., Helene H. Wagner², Michelle M. Hawks², Jonathan M. Bossenbroek², and Beatrice Van Horne². ¹National Center for Ecological Analysis and Synthesis, Santa Barbara, CA 93101, USA; ²Department of Biology, Colorado State University, Fort Collins, CO 80523, USA. **Changes in the structure of grassland dominated landscapes along a precipitation and productivity gradient in the central plains.**~~
- P#I-17** Wu, Jianguo. Department of Life Sciences, Arizona State University, West Campus, Phoenix, AZ 85069, USA. **Effects of changing grain size and extent in Landscape Characterization and Pattern Analysis: Generalities and idiosyncrasies.**

Land Use Change and Urban Ecology

- P#I-18** Alberti^{1,2}, Marina, Derek Booth³, Kristina Hill⁴, John Marzluff⁵, Stefan Coe^{1,2}, Roarke Donnelly⁵, Vivek Shandas^{1,2}, and Daniele Spirandelli^{2,4}. ¹Department of Urban Design and Planning, University of Washington, Seattle, WA 98195, USA; ²Urban Ecology Research Lab, University of Washington, Seattle, WA, USA; ³Department of Civil and Environmental Engineering, University of Washington, Seattle, WA 98115, USA; ⁴Department of Landscape Architecture, University of Washington, Seattle, WA 98195, USA; ⁵College of Forest Resources, University of Washington, Seattle, WA 98195, USA. **The Impacts of Urban Patterns on Ecosystem Dynamics.**
- P#I-19** Berling-Wolff, Sheryl^{1,2}, and Jianguo Wu². ¹Department of Plant Biology, Arizona State University, Tempe, AZ 85287, USA; ²Landscape and Systems Ecology Lab, Arizona State University-West, Phoenix, AZ 85069, USA. **Simulating Urban**



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Growth in the Phoenix Metropolitan Region: Relating Pattern to Process.

- P#I-20** Chen, Chang-Jui. Department of Landscape, Chinese Culture University, 100,2F, 125, Chung-Hua Rd., Sec.2, Taipei, Taiwan. **Landscape spatial patterns of three kinds of irrigation areas in Taoyuan Terrace, Taiwan.**
- P#I-21** Clagget¹, Peter, Michael Strager². ¹Canaan Valley Institute, Valley Forge, Pennsylvania 19482-0964, USA; ²West Virginia University, Morgantown, WV 26506-6108, USA. **An Interactive GIS Landscape Change and Analysis Tool.**
- P#I-22** Fisher, Christopher T. Archaeological Research Institute, Department of Anthropology, Arizona State University, Tempe, AZ 85287, USA. **2000 years of landscape change in the Lake Pátzcuaro Basin, Michoacán, Mexico.**
- P#I-23** Gomide, Marcia¹, Vladmir Luft², Mônica Serrão³. ¹Núcleo de Estudos de Saúde Coletiva, Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil; ²CREP, Visconde do Rio Branco, Minas Gerais, Brasil; ³SENAC, CEAD, Rio de Janeiro, Brasil. **From Tropical Forest to Eroded Lands: The Cost of the Natural Landscape in the Urbanization Process.**
- P#I-24** Gomide¹, Marcia, Roberto Medronho¹, and Heinrich haasenack². ¹Núcleo de Estudos de Saúde Coletiva - NESC/UFRJ/ Rio de Janeiro, Brasil; and ²Departamento de Ecologia/UFRGS/Porto Alegre, Brasil. **Precarious Urbanization and Transmission of the Hepatitis A in a Poor Area of Rio de Janeiro, Brazil.**
- P#I-25** Jaiteh¹, Malanding S., Paul V. Desanker² and Jiquan Chen³. ¹Center for International Earth Science Information Network (CIESIN), Columbia University, P.O. Box 1000, The Palisades, NY 10964; ²Department of Environmental Science, University of Virginia, Clark Hall, Charlottesville, VA 22903; ³School of Forestry and Wood Products, Michigan Technological University, 1400 Townsend Drive, Houghton MI 49931, USA. **Land Use and Landscape Patterns in Miombo Ecosystems.**
- P#I-26** Alberti^{1,2}, Marina, Erik Botsford¹, and Alex Cohen^{1,2}. ¹Department of Urban Design and Planning, University of Washington, Seattle, WA 98195, USA; ²Urban Ecology Research Lab, University of Washington, Seattle, WA 98195, USA. **Quantifying Urban Ecological Gradients in the Puget Sound Region.**
- P#I-27** Mauz, Kathryn. Arid Lands Resource Sciences, Office of Arid Lands Studies, University of Arizona, Tucson, AZ 85719, USA. **Quantifying Land Cover Change on the Catalina Piedmont, Tucson, Arizona, 1984-1998: Application of remote sensing and GIS analysis techniques.**
- P#I-28** Wimberly, Michael C., and Janet L. Ohmann. USDA Forest Service Pacific Northwest Research Station, Corvallis, OR 97331, USA. **Spatial Patterns of**



Forest Landscape Change in the Oregon Coast Range Between 1936 and 1996.

- P#I-29** Zhang, Jiahua and Hiroshi Kanzawa. Atmospheric Environment Division, National Institute for Environmental Studies, Tsukuba, Japan. **Landscape dynamics in typical ecological regions of China based on remote sensing and GIS.**

Landscape Pattern and Ecosystem Processes

- P#I-30** Charpentier^{1,2}, M. C. Wigand², R. McKinney², M. Chintala², G. Thursby², and J. Kiddon². ¹OAD Corporation, 27 Tarzwell Drive, Narragansett, RI 02882, USA; ²EPA, NHEERL, 27 Tarzwell Drive, Narragansett, RI 02882, USA. **A geographic information system (GIS) analysis of water transit through watersheds of subestuaries in Narragansett Bay, RI.**
- P#I-31** Paul¹, John F., Randy L. Comeleo², Jane Copeland³. ¹U.S. Environmental Protection Agency, Narragansett, RI 02882, USA; ²OAD Corporation, Corvallis, OR 97333 USA; and ³OAD Corporation, Narragansett, RI 02882, USA. **Landscape Structure and Estuarine Condition in the Mid-Atlantic Region of the United States: I. Developing Quantitative Relationships.**
- P#I-32** Hollister¹, Jeff W., John F. Paul², Jane Copeland³, Randy L. Comeleo⁴, Mike Charpentier³, Peter V. August¹, Mark Brush⁵. ¹University of Rhode Island, Department of Natural Resources Science, Kingston, RI, 02881; ²United States Environmental Protection Agency, Atlantic Ecology Division, Narragansett, RI 02882; ³OAD Corporation, Narragansett, RI 02882; ⁴OAD Corporation, Corvallis, OR 97333; ⁵University of Rhode Island, Graduate School of Oceanography, Narragansett, RI 02882. **Landscape Structure and Estuarine Condition in the Mid-Atlantic Region of the United States: II. Assessing the Accuracy of the National Land Cover Dataset at Multiple Extents.**
- P#I-33** Koerner, Brenda A., and Jeffrey M. Klopatek. Department of Plant Biology, Arizona State University, Tempe, AZ, USA. **Anthropogenic and Natural CO₂ Efflux in an Arid Urban Environment: Pattern and Processes.**
- P#I-34** Lin^{1,3}, Yu-Pin, Tsun-Kuo Chang², Tung-po Teng³ and Chen-Fa Wu¹. ¹Department of Landscape Architecture, Chinese Culture University, Taipei, Taiwan 11114; ²Graduate Institute of Agricultural Engineering, National Taiwan University, Taipei, Taiwan 10617; ³Department of Geography, Chinese Culture University, Taipei, Taiwan, 11114. **A study of Landscape diversity and soil heavy metal pollution in an agricultural landscape.**
- P#I-35** Jenerette^{1,2}, G. Darrel, Matthew A. Luck^{1,2}, Jianguo Wu¹, Nancy B. Grimm², Diane Hope³, and Weixing Zhu⁴. ¹Landscape and Systems Ecology Lab, Arizona State University-West, Phoenix, AZ 85069, USA; ²Department of Biology, Arizona State



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University, Tempe, AZ 85287, USA; ³Center for Environmental Studies, Arizona State University, Tempe, AZ 95287, USA; ⁴Department of Biological Sciences, Binghamton University - SUNY, Binghamton, NY 13902, USA. **Linking spatial pattern of soil organic matter to ecological processes in an urban landscape.**

- P#I-36** Tueller¹, Paul T., Michael² Limb¹ and Jianguo Wu³. ¹Department of Environmental and Resource Sciences, University of Nevada Reno, Reno, Nevada 89512, USA; ²Bureau of Land Management, Klamath Falls, OR, USA; ³Landscape and Systems Ecology Lab, Arizona State University, Phoenix, AZ 85069, USA. **Landscape Pattern and ecosystem attributes on a western Nevada Rangeland Ecosystem.**
- P#I-37** Wu, Wanli. School of Natural Resource Sciences, University of Nebraska-Lincoln, Lincoln, NE 68583, USA. **Scales and Processes of Flow Regime, Hydrologic Connectivity, and Riverine Landscape Patterns on Braided River Floodplains.**
- P#I-38** David, John (EBo) and Jianguo (Jingle) Wu. Department of Life Sciences, Arizona State University West, Phoenix, AZ 85069 and Department of Plant Biology, Arizona State University, Tempe, AZ 85069, USA. **Toward Developing a Hierarchical Patch Dynamics Modeling Platform.**

- 5:30pm-6:30pm **US-IALE General Business Meeting**
Open to All Members, Ventana Room (Room 226)
- 7:00pm - 9:30pm **NASA-MSU Awards Dinner**, Gold Room (Room 203)
- 9:00pm - 11:00pm **Student Social**, Bandersnatch Brew Pub, 125 E 5th Street, Tempe
(480) 966-4438

April 27 (Friday) Morning Plenary Session (8:30am - 9:30am)

Chair: Dr. Jianguo (Jingle) Wu, Arizona State University

Location: Ventana Room (Memorial Union, Room 226)



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8:30 - 9:30 Plenary Address by **Dr. Orié L. Loucks**, Department of Zoology, Miami University, Oxford, OH 45056, USA:

Influencing the Social and Political Metabolism of Landscapes

9:30 - 9:45 **COFFEE BREAK**

April 27 (Friday) Morning - Concurrent Session #1

Regular Session Landscape Pattern Analysis: Theory and Methods

(II_{AM}-1):

Chairperson: **X. Ben Wu**, Department of Rangeland Ecology and Management, Texas A&M University, College Station, TX 77843, USA

Location: Pima Room (MU Room 218)

9:45-10:00 Ludwig, John. CSIRO Sustainable Ecosystems, PMB 44, Winnellie, Darwin, Australia 0822. **Monitoring Landscape Health: A New Resource Retention Index based on Remote-sensing.**

10:00-10:15 Hay¹, G.J., P. Dubé¹, D.J. Marceau¹, A. Bouchard². ¹Geocomputing Laboratory, Department of Geography, University of Montreal, Montreal, Que, Canada, H3C 3J7; ²IRBV, University of Montreal, Jardin Botanique de Montreal, Montreal, Que. Canada, H1X 2B2. **Scale-Space for Landscape Ecologists: A Novel Approach for Defining Multi-Scale Landscape Structure In High-Resolution Imagery.**

10:15-10:30 Blaschke, Thomas. Department of Geography and Geoinformation, University of Salzburg, Hellbrunner Str. 34 A-5020 Salzburg, Austria. **Hierarchical patch dynamics and object-oriented image analysis: Multi-scale exploration of a cultural landscape.**

10:30-10:45 He¹, Hong S., Stephen J. Ventura², and David J. Mladenoff³. ¹School of Natural Resources, University of Missouri-Columbia, Columbia, MO 65211, USA; ²Land Information & Computer Graphic Facilities, University of Wisconsin, Madison, 53706, USA; and ³Department of Forest Ecology & Management, University of Wisconsin, Madison, WI 53706, USA. **Effects of GIS Aggregation Approaches on Landscape Patterns Using Landsat TM Satellite Imagery.**



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- 10:45-11:00 Lin^{1,2}, Yu-Pin, Tung-po Teng² and Chen-Fa Wu¹. ¹Department of Landscape Architecture and ²Department of Geography, Chinese Culture University, Taipei, Taiwan 11114. **Spatial continuity and fragmentation analysis of vegetation landscape at Lugiakan conservation area in Taiwan.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Guo, Qinghua, Wei Luo*, Ye Qi. Department of Environmental Science, Policy and Management, University of California, Berkeley, CA, 94704, USA. **Semivariance techniques in point pattern analysis: A comparison with Ripley K.**
- 11:30-11:45 de-Camino-Beck*, Tomas and Arturo Sanchez-Azofeifa. Earth and Atmospheric Science Department, University of Alberta, Edmonton AB, Canada T6G 2E3. **A critical review of landscape fragmentation measures using cellular automata.**
- 11:45-12:00 Bert, Daniel G., and Kathryn Freemark. Ottawa-Carleton Institute of Biology, Carleton University, Ottawa, On. Canada K1S 5B6 (DGB); National Wildlife Research Centre, Environment Canada, 100 Gamelin Blvd., Hull, Quebec, Canada K1A 0H3 (KEF). **Nested species subsets in a regional context: effects of landscape structure, scale and error.**
- 12:00-12:15 Tinker¹, Daniel B., William H. Romme², and Don G. Despain³. ¹Department of Geosciences and Natural Resources Management, Western Carolina University, Cullowhee, NC 28723, USA; ²Biology Department, Fort Lewis College, Durango, CO 81301, USA; and ³USGS, Department of Biology, Montana State University, Bozeman, MT 59717, USA. **Historic Range of Variability in Landscape Structure in Subalpine Forests of the Greater Yellowstone Area.**

April 27 (Friday) Morning - Concurrent Session #2

Special Session Assessing Current and Future Regional Vulnerabilities

(II_{AM}-2):

Chairperson: **Betsy R. Smith**, U.S. Environmental Protection Agency, National Exposure Research Laboratory, Research Triangle Park, NC 27711, USA

Location: Cochise Room (MU Room 212)

9:45-10:00 Smith¹, Elizabeth R., R.V. O'Neill², K. Bruce Jones³, James D. Wickham¹, and



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Kurt H. Riitters⁴. ¹U.S. Environmental Protection Agency, National Exposure Research Laboratory, Research Triangle Park, NC 27711; ²Oak Ridge, TN 37830, ³ U.S. Environmental Protection Agency, National Exposure Research Laboratory, Las Vegas, NV 89119; ⁴USDA Forest Service, Forest Health Monitoring Program, Research Triangle Park, NC 27709. **A Strategy for Assessing Current and Future Regional Vulnerabilities.**

10:00-10:15

Tankersley Jr.¹, Roger D., Kenneth H. Orvis², and Elizabeth R. Smith³. ¹Tennessee Valley Authority, Norris, TN 37828 USA; ²Department of Geography, University of Tennessee, Knoxville, TN 37996; ³EPA Office of Research and Development, Research Triangle Park, NC 27711, USA. **The Geography of Migration: A Landscape View of Stopover Habitats and Pathways in the Eastern United States.**

10:15-10:30

Riitters¹, Kurt, Jim Wickham², Bob O'Neill³, and Bruce Jones⁴. ¹US Forest Service, Research Triangle Park, NC 27709, USA; ²US EPA, Research Triangle Park, NC, 27709, USA; ³ Oak Ridge, TN 37830, USA; and ⁴US EPA, Las Vegas, NV, 89173, USA. **Modeling the risk of forest fragmentation in the mid-Atlantic region.**

10:30-10:45

Wickham¹, J., E. Smith¹, R. O'Neill², T. Wade¹, K. Riitters³, K. Jones⁴. ¹National Exposure Research Laboratory, EPA, RTP, NC 27711, USA; ²Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA; ³Forest Health Monitoring Unit, Forest Service, RTP, NC, 27709, USA. ⁴National Exposure Research Laboratory, EPA, Las Vegas, NV 89119, USA. **Propagating nutrient export risk across watersheds.**

10:45-11:00

Jackson¹, Laura, Sandra Bird^{2*}, Ronald Matheny³, Robert V. O'Neill⁴, Denis White⁵, Kristen Boesch⁶, and Jodi Kovach⁶. ¹US EPA, National Health and Environmental Effects Laboratory, Research Triangle Park, NC, 27711, ²US EPA, National Exposure Research Laboratory, Athens, GA, ³ US EPA, National Exposure Research Laboratory, Research Triangle Park, NC 27711, ⁴ Oak Ridge, TN 37830, ⁵US EPA, National Health and Environmental Effects Laboratory, Corvallis, OR, ⁶University Of North Carolina, Chapel Hill, NC, USA. **Projecting Ecological Vulnerability to Land-Use Change across the Mid-Atlantic Region.**

11:00-11:15

COFFEE BREAK

11:15-11:30

Hess, George. Forestry Department, North Carolina State University, Raleigh NC 27695-8002, USA. **Measuring Suburban Sprawl.**

11:30-11:45

Wainger, Lisa A. and Dennis M. King. University of Maryland, Center for Environmental Science, CBL, Solomons, MD 20688, USA. **Linking**



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Environmental Indicators to Socio-Economic Indicators to Communicate Trade-Offs.

- 11:45-12:00 Tran¹, Liem T., C. Gregory Knight^{1,2}, Robert V. O'Neill³, Elizabeth R. Smith⁴, Kurt H. Riitters⁵, and James Wickham⁴. ¹Center for Integrated Regional Assessment, the Pennsylvania State University, University Park, PA 16802, USA; ²Department of Geography, Pennsylvania State University, University Park, PA 16802, USA; ³Oak Ridge National Laboratory, Environmental Sciences Division, Oak Ridge, TN, USA; ⁴U.S. Environmental Protection Agency, Office of Research and Development, National Exposure Research Laboratory, Research Triangle Park, NC, USA; and ⁵U.S. Department of Agriculture, Forest Service, Forest Health Monitoring Program, Research Triangle Park, NC, USA. **Fuzzy decision analysis for integrated environmental vulnerability assessment of the Mid-Atlantic region.**

April 27 (Friday) Morning - Concurrent Session #3

Regular Session Pattern and Process in Urban Landscapes

(II_{AM}-3):

Chairperson: **Mark J. McDonnell**, Australian Research Centre for Urban Ecology, Royal Botanic Gardens Melbourne and Botany School, University of Melbourne, Victoria, 3010, Australia

Location: Alumni Room (MU Room 202)

- 9:45-10:00 McDonnell, Mark J. and Kirsten Parris, Australian Research Centre for Urban Ecology, Royal Botanic Gardens Melbourne, c/o Botany School, University of Melbourne, Victoria, 3010, Australia. **Creation of a Human Dominated Landscape (Melbourne) has Increased the Breeding Range of Grey-headed Flying Foxes (*Pteropus poliocephalus*) in Australia.**
- 10:00-10:15 Theobald, David M. Natural Resource Ecology Laboratory, Colorado State University, Fort Collins, CO 80523, USA and The Nature Conservancy's Smith Fellowship Program. **Quantitative measures of the urban-rural gradient.**
- 10:15-10:30 Cadenasso¹, M.L., S.T.A. Pickett¹, and W.C. Zipperer². ¹Institute of Ecosystem Studies, Millbrook, NY 12545, USA; and ²USDA Forest Service, Syracuse, NY 13210, USA. **Spatial Heterogeneity in an Urban Watershed: Baltimore, Maryland.**
- 10:30-10:45 Lister¹, Tonya, Rachel Riemann¹, Mike Hoppus¹, and Wayne Zipperer².



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- ¹USDA Forest Service, Northeastern Research Station, 11 Campus Boulevard, Suite 200, Newtown Square, PA 19073, USA; ²USDA Forest Service, SUNY College of Environmental Science and Forestry, 5 Moon Library, Syracuse, NY 13210, USA. **Changes in land use patterns and forest fragmentation over fifty years in the Baltimore area and their effects on forest composition and structure.**
- 10:45-11:00 Grove¹, J. Morgan and Ann P. Kinzig². ¹USDA Forest Service, 705 Spear Street, South Burlington, VT 05403, USA; ²Department of Biology, Arizona State University, Tempe, AZ 85287, USA. **Synthesis of social and ecological approaches for the spatial analyses of human ecosystems, with examples from Phoenix, Arizona and Baltimore, Maryland.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Decker¹, E. H., B. T. Milne¹, F. A. Smith¹, and S. M. Elliott². ¹Department of Biology, University of New Mexico, Albuquerque, New Mexico, 87131, USA; ²Division of Earth and Environmental Sciences, Los Alamos National Laboratory, Los Alamos, New Mexico, USA. **General Patterns in The Spatial Structure of Urban Networks.**
- 11:30-11:45 Mehaffey, Megan, H., Maliha S. Nash, Tim G. Wade, and Curt M. Edmonds. U.S. Environmental Protection Agency, Las Vegas, Nevada, 89119, USA. **New York City Water Supply: A 25 Year Landscape Analysis of the Catskill/Delaware Watersheds.**
- 11:45-12:00 Noorizan, Mohamed. Department of Landscape Architecture, Faculty of Design and Architecture, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia. **The Revitalisation of Malaysian Urban Landscapes.**
- 12:00-12:15

April 27 (Friday) Morning - Concurrent Session #4

Regular Session Landscape Pattern and Ecosystem Processes

(II_{AM}-4):

Chairperson: **Jiquan Chen**, School of Forestry and Wood Products, Michigan Tech University, Houghton, MI 49931, USA

Location: Mohave Room (MU Room 222)

- 9:45-10:00 Euskirchen, Eugenie¹, Jiquan Chen¹, Harbin Li², and Eric Gustafson³.



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¹Michigan Technological University, Houghton, MI 49931, USA; ²USDA Forest Service Center for Forested Wetlands Research, Charleston, SC, 29414, USA; and ³USDA Forestry Sciences Laboratory, Rhinelander, WI, 54501, USA. **Modelling net carbon across a hypothetical landscape under alternative harvesting strategies.**

- 10:00-10:15 Sturtevant, Brian R., Steven W. Seagle, and Philip Townsend. Appalachian Laboratory, University of Maryland Center for Environmental Science, 301 Braddock Road, Frostburg, MD 21532, USA. **Comparing terrain-based models of forest productivity in western Maryland: Extending to regional scales.**
- 10:15-10:30 Pennington, Deana D. Department of Geosciences, Oregon State University, Corvallis, OR 97331, USA. **Spatiotemporal Analysis of Landscape Structure, Function and Change in the Western Cascades of Oregon.**
- 10:30-10:45 Tang, Jianwu, Ming Xu, and Ye Qi. Department of Environmental Science, Policy, and Management. University of California, 135 Giannini Hall Berkeley, CA 94720-3312, USA. **The impact of forest thinning on soil respiration.**
- 10:45-11:00 Bennett, Elena and Stephen R. Carpenter. Center for Limnology, 680 N. Park St., Madison, WI 53706. **Phosphorus distribution along an urban-rural gradient.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Zheng, Daolan, and Stephen D. Prince. Department of Geography, University of Maryland, College Park, MD 20742, USA. **Grid net primary production estimates in Finland and Sweden at 1-km and 0.5 degree cell sizes.**
- 11:30-11:45 Kerkhoff, Andrew J., Scott N. Martens, and Bruce T. Milne. Department of Biology, University of New Mexico, Albuquerque, NM 87131, USA. **Landscape ecohydrology and patterns of tree cover in semi-arid woodlands.**
- 11:45-12:00 Krysanova, Valentina and Frank Wechsung. Potsdam Institute for Climate Impact Research, P.O.Box 601203, Telegrafenberg, 14412 Potsdam, Germany. **West-European trends in agriculture and their impact on ecohydrological processes: A modelling study in the state of Brandenburg.**

April 27 (Friday) Morning - Concurrent Session #5



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Special Session (II_{AM}-5): **Workshop: The Decline of Agricultural Landscapes in the Phoenix Metropolitan Area**

Chairperson: **Laura Musacchio**, School of Planning and Landscape Architecture, Arizona State University, Tempe, AZ 85287, USA

Co-Organizers: **Frederick Steiner**, Office of the Vice Provost for Research, Arizona State University
 Katherine Crewe, Assistant Professor, School of Planning and Landscape Architecture, Arizona State University
 Jeff Schmidt, Community Assistance Coordinator, USDA - Natural Resources Conservation Service, Phoenix, AZ

Location: La Paz Room (MU Room 223)

9:45-11:00 Workshop activities

11:00-11:15 COFFEE BREAK

Special Session (II_{AM}-6): **Workshop: The Equity of Regional Open Space Conservation and Restoration Projects in the Phoenix Metropolitan Area: Is a Planning Framework Needed?**

Chairperson: **Laura Musacchio**, School of Planning and Landscape Architecture, Arizona State University, Tempe, AZ 85287, USA

Co-Organizers: **Joseph Ewan**, Assistant Professor, School of Planning and Landscape Architecture, Arizona State University
 Ruth Yabes, Associate Professor, School of Planning and Landscape Architecture, Arizona State University

Location: La Paz Room (MU Room 223)

11:15-12:15 Workshop activities



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LUNCH BREAK

12:15 - 1:30 pm

**Silent Book Auction: Second Floor, Outside of the Arizona Ball Room
(Room 207)**

April 27 (Friday) Afternoon - Half-Day Field Trips

1:00pm-5:00pm **Half-Day Field Trips**

Buses for the half-day field trips will be leaving from the dropoff area south of the College of Business Building near the corner of Lemon Street and Normal Street.

April 27 (Friday) Evening Banquet (7:00pm - 9:30pm)

Chair: Virginia Dale

Place: Tempe Mission Palms Hotel, 60 East 5th Street, Tempe

6:00pm-7:00pm **Banquet Reception**

7:00pm-8:00pm **Banquet Dinner**

- 8:00pm-8:10pm • Eric Gustafson: Award Committee Announcement
- 8:10pm-8:20pm • Pete August: Foreign Scholar Travel Awards Announcement
- 8:20pm-8:30pm • Jack Lou: NASA-MSU Professional Enhancement Awards Announcement
- 8:30pm-8:40pm • Virginia Dale: Election Results

8:40pm-9:30pm **Banquet Address:** (Introduction to the speaker by Dr. Laura Musacchio)
Dr. Katherine Crewe: The Origins Of Phoenix Farming



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April 28 (Saturday) Morning Plenary Session (8:30am - 9:30am)

Chair: **Laura Musacchio**, School of Planning and Landscape Architecture, Arizona State University, Tempe, AZ 85287, USA

Location: Ventana Room (Memorial Union, Room 226)

8:30 - 9:30 Plenary Address by **Prof. Anne W. Spirn**:

Watersheds, History, Landscape Planning and Community Development: Reflections on Fifteen Years of the West Philadelphia Landscape Project

9:30 - 9:45 **COFFEE BREAK**

April 28 (Saturday) Morning - Concurrent Session #1

Special Session (III_{AM}-1): Complexity Theory and Ecological Applications

Chairpersons: **Darrel Jenerette** and **Jianguo Wu**, Arizona State University, Tempe, AZ 85287, USA

Location: Ventana Room A (MU Room 226)

9:45-10:00 Jenerette^{1,2}, G. Darrel, Jianguo Wu¹, Nancy B. Grimm². ¹Dept. of Life Sciences, Arizona State University-West, Phoenix, AZ 85069, USA; ²Department of Biology, Arizona State University, Tempe, AZ 85287, USA. **Spatial nitrogen dynamics and self-organization.**

10:00-10:15 Stein, D. L. Department of Physics, University of Arizona, Tucson, AZ 85721, USA. **Spin glasses, disorder, and complexity.**

10:15-10:30 ~~Bascompte, Jordi. Estación Biológica de Doñana, CSIC, Sevilla, Spain.~~
~~**Complex Systems and Habitat Loss.**~~ (CANCELLED)

10:30-10:45 Keitt, Timothy H. Department of Ecology and Evolution, State University of New York at Stony Brook, Stony Brook, NY 11794, USA. **Statistical Mechanics of a Continent-Wide Biological Survey.**



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- 10:45-11:00 Müller, Felix. Ecology Center, University of Kiel, Schauenburgerstrasse 112, D 24118 Kiel, Germany. **Ecosystem Synergetics - Applying Systems Theoretical Concepts to Ecosystem and Landscape Development.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Li, Bai-Lian. Department of Biology, University of New Mexico, Albuquerque, New Mexico 87131, USA. **Spatiotemporal Complexity of Nonlinear Ecological Interactions.**
- 11:30-11:45 With¹, Kimberly A., and Anthony W. King². ¹Division of Biology, Kansas State University, Manhattan, KS 66506, USA; and ²Environmental Sciences Division, Oak Ridge National Laboratory, Oak Ridge, TN 37831, USA. **The effect of landscape structure on critical biodiversity.**
- 11:45-12:00 Restrepo, Carla, Bruce T. Milne*, D. Bader, W. Pockman, and A. Kerkhoff. Department of Biology, The University of New Mexico, Albuquerque, NM 871131, USA. **Variation in vegetation growth rates: Implications for the evolution of semi-arid landscapes.**
- 12:00-12:15 Washington-Allen^{1,2}, Robert A., Neil E. West¹, R. Douglas Ramsey³ and Carolyn T. Hunsaker⁴. ¹Department of Rangeland Resources, Utah State University, Logan, Utah 84322, USA; ²Environmental Sciences Division, Oak Ridge National Laboratory, MS 6407, Oak Ridge, TN 37831, USA; ³Remote Sensing/GIS Laboratory and Department of Geography and Earth Resources, Utah State University, Logan, Utah 84322, USA; ⁴USDA Forest Service, Pacific Southwest Research Laboratory, Fresno, CA 93710, USA. **A Dynamical Systems Perspective on Being Dried, Eaten, and Burned: What is a semi-arid landscape to do?**

April 28 (Saturday) Morning - Concurrent Session #2

- Special Session (III_{AM}-2):** **Landscape Ecology Comes to Town: An exploration of concepts, issues, strategies and case studies of applied urban landscape ecology**
- Chairperson:** **Jack Ahern**, Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst, MA 01003, USA
- Location:** Cochise Room (MU Room 212)



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9:45-10:00	
10:00-10:15	Yokohari, Makoto, Takashi Watanabe and Takashi Hirohara. University of Tsukuba, Tsukuba, Ibaraki, 305-8573, Japan. Restoring ecological relationships between urban and rural landscapes: A new ecological planning concept for Asian mega-cities.
10:15-10:30	Condon, Patrick, and Sara Muir. University of British Columbia, Vancouver, Canada. The Headwaters Sustainable Community for 13,000: The East Clayton Neighborhood Concept Plan.
10:30-10:45	Tjallingii, Sybrand P. Alterra, Green World Research, P.O. 47 6700 AA Wageningen, The Netherlands. Carrying Structures of the Urban Landscape.
10:45-11:00	Woodward, Joan and Kyle Brown. Department of Landscape Architecture, California State Polytechnic University, Pomona, California. Patterns of Perseverance: Thirty Years of Ecological Planning in Los Angeles.
11:00-11:15	COFFEE BREAK
11:15-11:30	Snep, Robbert. Department of Landscape Ecology, Alterra, Green World Research, 6700 AA Wageningen, The Netherlands. Modelling and planning nature & biodiversity in cities: The (urban) landscape ecological approach.
11:30-11:45	Ahern, Jack. Department of Landscape Architecture and Regional Planning, University of Massachusetts, Amherst, MA, USA. Future Landscape Scenarios in Urban Watershed Planning.
11:45-12:00	Questions/Session Summary

April 28 (Saturday) Morning - Concurrent Session #3

Regular Session Landscape Pattern and Species Distribution

(III_{AM}-3):

Chairperson: **Marlene B. Cole**, Department of Ecology, Evolution and Natural Resources, Rutgers University, New Brunswick, NJ 08901, USA

Location: Alumni Room (MU Room 202)

9:45-10:00



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- 10:00-10:15 Cole, Marlene B. and Richard G. Lathrop. Department of Ecology, Evolution and Natural Resources, Rutgers University, 14 College Farm Road, New Brunswick, NJ 08901, USA. **Spatial relationships of environmental and sonar backscatter-derived variables to fish abundance data in the New York Bight.**
- 10:15-10:30 Krawchuk, Meg and Phil Taylor. Biology Department, ACWERN, Acadia University, Wolfville, NS B0P 1X0, Canada. **The relative importance of habitat structure changes within a nested hierarchy of spatial scales for three species of insects.**
- 10:30-10:45 Aukema, Juliann E. Department of Ecology and Evolutionary Biology, University of Arizona, Tucson, AZ 85719 USA. **Mistletoe distribution at multiple scales: Patterns, processes, and mechanisms.**
- 10:45-11:00 Hoffman¹, Aaron L., and John A. Wiens². ¹Department of Biology, Colorado State University, Fort Collins, CO 80523, USA; ²Department of Biology and Graduate Degree Program in Ecology, Colorado State University, Fort Collins, CO 80523, USA. **The use of semivariance analysis for scale detection in beetle diversity and landscape properties on the shortgrass steppe of Colorado.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Tyler¹, Marnie W., Don McKenzie¹, and David L. Peterson². ¹College of Forest Resources, University of Washington, Seattle, WA 98195, USA; and ²USGS Forest & Rangeland Ecosystem Science Center, Cascadia Field Station, University of Washington. **Effects of Human Land Use on Landscape Structure on the Western Olympic Peninsula, Washington, U.S.A.**
- 11:30-11:45 Giladi, Itamar, Michael Bokamper, and H. Ronald Pulliam. Institute of Ecology, The University of Georgia, Athens, GA. 30602. **Distribution, dispersal, and habitat suitability of *Hexastylis arifolia* in a mosaic landscape.**
- 11:45-12:00 Fairbanks¹, Dean H.K., and Albert S. van Jaarsveld¹. ¹Conservation Planning Unit, Department of Zoology & Entomology, University of Pretoria, Pretoria 0002, South Africa. **Human-Ecosystem Co-evolution: Avian Diversity and Structure within African Land Transformation Systems.**
- 12:00-12:15



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April 28 (Saturday) Morning - Concurrent Session #4

Regular Session Landscape-Scale Ecological Assessment

(III_{AM}-4):

Chairperson: Kevin McGarigal, Department of Natural Resources Conservation, University of Massachusetts, Amherst, MA 01003, USA.

Location: Mohave Room (MU Room 222)

- 9:45-10:00 McGarigal¹, Kevin, Scott Jackson, Brad Compton, Kasey Rolih, Ede Ene, Kirstin Seleen, and Curt Griffin. Department of Natural Resources Conservation, University of Massachusetts, Amherst, MA 01003, USA. **Biodiversity assessment: A coarse-filtered landscape ecological approach.**
- 10:00-10:15 Smith¹, Jonathan, James D. Wickham¹, Douglas Norton², Tim G. Wade³ and K. Bruce Jones³. ¹Landscape Characterization Branch (MD-56), US EPA, Research Triangle Park, NC 27711, USA; ²Office of Water, US EPA, 1200 Pennsylvania Ave. NW, Washington DC, 20460; ³Landscape Ecology Branch, US EPA, PO Box 93478, Las Vegas, NV 89193. **Utilization of Landscape Indicators to Model Water Quality.**
- 10:15-10:30 Kepner¹, W.G., S.N. Miller², M. Hernandez², R.C. Miller², D.C. Goodrich², C.M. Edmonds¹, F. K. Devonald³, L. Li⁴, and P. Miller². ¹U.S. Environmental Protection Agency, National Exposure Research Laboratory, Las Vegas, Nevada, USA; ²USDA–Agricultural Research Service, Southwest Watershed Research Center, Tucson, Arizona, USA; ³U.S. Environmental Protection Agency, National Center for Environmental Research, Washington, D.C., USA; ⁴University of New Mexico, Department of Biology, Albuquerque, New Mexico, USA. **An Evaluation of Hydrologic Response to 25 Years of Landscape Change in a Semi-arid Watershed.**
- 10:30-10:45 Richey, David J. Department of Landscape Architecture, University of Oregon, Eugene, OR 97403-5247, USA. **Design and Prioritized Implementation of Woody Riparian Buffers for Increasing Effective Shade in Agricultural Landscapes of the Willamette River Valley, Oregon.**
- 10:45-11:00 Desimone, Steven M., Brian L. Cosentino, Joseph B. Buchanan, D. John Pierce, and Timothy Quinn. Washington Department of Fish and Wildlife, 600 Capitol Way North, Olympia, WA 98501, USA. **Riparian Buffers as Habitat for Northern Goshawks: A Spatial Assessment at Three Scales on Managed Forest Landscapes in Western Washington.**
- 11:00-11:15 **COFFEE BREAK**



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- 11:15-11:30 Baker¹, Matthew E., Michael J. Wiley¹, and Paul W. Seelbach². ¹School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI 48109-1115, USA; ²Institute for Fisheries Research, Michigan Department of Natural Resources, Ann Arbor, MI 48109, USA. **Predicting spatial variation in riparian hydrology and forest composition across Lower Michigan.**
- 11:30-11:45 Hayman, Alicia A., and Hans Schreier. Institute for Resources and Environment, May Pen, Clarendon, Jamaica W.I. **The effects of land use practices on water quality and quantity in the Hope River watershed, Jamaica.**
- 11:45-12:00

April 28 (Saturday) Morning - Concurrent Session #5

Regular Session Landscape Pattern and Biodiversity Conservation

(III_{AM}-5):

Chairperson: **Paul C. Hellmund**, Landscape Architecture Program, Colorado State University, Fort Collins, CO 80523, USA

Location: La Paz Room (MU Room 223)

- 9:45-10:00 Hellmund¹, Paul Cawood, Theresa Tiehen², and Raymond Sperger³. ¹Landscape Architecture Program, Colorado State University, Fort Collins, CO 80523, USA; ²Colorado Department of Transportation, Aurora CO 80011, USA; ³South Platte Park, South Suburban Park and Recreation District, Littleton, CO 80121, USA. **Wildlife, a Highway, and Community-based Conservation: A Case Study on Denver Urbanizing Fringe.**
- 10:00-10:15 Weber, Whitney L., John L. Roseberry, and Alan Woolf. Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, IL 62901, USA. **Contribution of the Conservation Reserve Program to general landscape structure in Illinois.**
- 10:15-10:30 Meegan¹, Rebecca P., David S. Maehr¹, and Thomas S. Hoctor². ¹Department of Forestry, University of Kentucky, Lexington, KY 40546-0073; and ²Department of Landscape Architecture, University of Florida, Gainesville, FL 32611-5704. **Recovering the Florida Panther through Regional Conservation Planning.**
- 10:30-10:45 Beazley, Karen F., Tamaini V. Snaith, and Peter J. Austin-Smith, Jr. School for Resource and Environmental Studies, Dalhousie University, Halifax, N.S.



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B3H 3J5. Canada. Delineating Critical Habitat for Viable Populations of Focal Species: An Example From Nova Scotia.

- 10:45-11:00 Sanchez-Azofeifa¹, G. Arturo, Gretchen Daily², and Paul Ehrlich³. ¹Earth and Atmospheric Sciences Department, University of Alberta, Edmonton, AB, Canada T6G 2E3; ² Center for Conservation Biology, Department of Biological Sciences, Stanford University, Stanford, CA 94305-5020, USA; and ³Center for Conservation Biology, Department of Biological Sciences, Stanford University, Stanford, CA 94305-5020, USA. **Isolation of National Parks in the Tropics.**
- 11:00-11:15 COFFEE BREAK**
- 11:15-11:30 Tole, L. Center for Development Studies, University of Glasgow, Glasgow, U.K. **Habitat Loss and Anthropogenic Disturbance in Jamaica's Hellshire Hills Region.**
- 11:30-11:45 Liu¹, Jianguo, Marc Linderman¹, Zhiyun Ouyang², Li An¹, Jian Yang³, and Hemin Zhang³. ¹Department of Fisheries and Wildlife, Michigan State University, East Lansing, Michigan, USA; ² Department of Systems Ecology, Chinese Academy of Sciences, Beijing, China; and ³ China Center for Giant Panda Research and Conservation, Sichuan Province, China. **Panda Habitat Pattern and Process across Space and Time: Integrating Landscape Ecology with Human Demography, Behavior and Socioeconomics at Multiple Scales.**
- 11:45-12:00 Metzger, Jean Paul. Department of Ecology, University of Sao Paulo, Rua do Matao 321, trv. 14, 05508-900, Sao Paulo, Brazil. **Effects of deforestation pattern and private nature-reserves on the forest conservation in agricultural areas of the Brazilian Amazon.**

12:15 - 1:30pm: Lunch Break



April 28 (Saturday) Afternoon - Concurrent Session #1

Special Session Premises and Problems with Spatial Analysis

(III_{PM}-1):

Chairpersons: **Marie-Jose Fortin¹ and Maria Miriti²**, ¹School of Resource and Environmental Management, Simon Fraser University, Burnaby, B.C., Canada; ²Department of Ecology and Evolution SUNY at Stony Brook Stony Brook NY 11794, USA

Location: Ventana Room A (MU Room 226)

- 1:30-1:45 Fortin, Marie-José¹, Mathieu Philibert², Tarmo Remme¹ and Ferenc Csillag³. ¹School of Resource and Environmental Management, Simon Fraser University, Burnaby, B.C., Canada V5A 1S6; Department of Geography, Simon Fraser University, Burnaby, B.C., Canada V5A 1S6; ³Department of Geography, University of Toronto, Mississauga, Ontario, Canada L5L 1C6. **Sensitivity analysis of boundary detection on spatial features of heterogeneous landscape.**
- 1:45-2:00 Dale¹, M.R.T., M.-J. Fortin², and P. Legendre³. ¹Department of Biological Sciences, University of Alberta, Edmonton, T6G 2E9, Canada. ²School of Resource and Environmental Management, Simon Fraser University, Burnaby, V5A 1S6, Canada. ³Département de sciences biologiques, Université de Montréal, Montréal, H3C 3J7, Canada. **Accounting for spatial autocorrelation in statistical tests of landscape characteristics.**
- 2:00-2:15 Li¹, Harbin, and Jianguo Wu². ¹USDA Forest Service Southern Research Station, Charleston, SC 29414, USA; ²Landscape and Systems Ecology Lab, Arizona State University-West, Phoenix, AZ 85069, USA. **Landscape Analysis with Pattern Indices: Problems and Solutions.**
- 2:15-2:30 Miriti, Maria. Department of Ecology and Evolution SUNY at Stony Brook Stony Brook NY 11794, USA. **What can distort the identification of landscape spatial pattern?**
- 2:30-2:45 COFFEE BREAK**
- 2:45-3:00 Urban, Dean L. Nicholas School of the Environment, Duke University, Durham, NC 27708 USA. **Extending community ecological analyses to landscape scales.**
- 3:00-3:15 Anthony¹, J.A., and G.A. Bradshaw². ¹Department of Fisheries and Wildlife, 104 Nash Hall, Oregon State University, Corvallis, OR 97331, USA; ²USDA



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Forest Service- PNW Research and Rogue-Siskiyou National Forest, Applegate Ranger District, Jacksonville, OR 97530-9341, USA. **Wavelet analysis as an approach to investigate the reciprocal relationship between ecological pattern and process.**

3:15-3:30 Hughes, Josie, Andrew Fall, Marie-Josée Fortin and Ken Lertzman. School of Resource and Environmental Management, Simon Fraser University, Burnaby, B.C., Canada V5A 1S6. **Predicting the effect of pattern on congregative dispersal: A comparison of landscape indices.**

3:30-3:45 Questions/Session Summary

4:00-4:15 COFFEE BREAK

Regular Session (III_{PM}-6): Land Use and Land Cover Change: Modeling

Chairperson: Bryan C. Pijanowski, Land Use Cover Change Enterprise, Michigan State University, East Lansing, MI, USA.

Location: Ventana Room A (MU Room 226)

4:15-4:30 Pijanowski, Bryan C. College of Natural Science, Michigan State University, East Lansing, Michigan 48824, USA. **Can a neural network based land use change model generalize across space and time? An application of the Land Transformation Model for the Twin Cities and Detroit Metropolitan Areas.**

4:30-4:45 Meretsky¹, Vicky, Tom Evans², Eduardo Brondizio³, Cynthia Croissant², and Dawn Parker⁴. ¹School of Public and Environmental Affairs, ²Department of Geography, ³Department of Anthropology, ⁴Center for the Study of Institutions, Population and Environmental Change, Indiana University, Bloomington, IN 47405, USA. **Characterizing landscape composition and pattern: Cross-site comparison of social and biophysical factors.**

4:45-5:00 Alberti^{1,2}, Marina and Paul Waddell^{1,3}. ¹Department of Urban Design and Planning, University of Washington, Seattle, WA. 98195 USA; ²Urban Ecology Research Lab, University of Washington, Seattle, WA 98195, USA; ³Daniel J. Evans School of Public Affairs, University of Washington, Seattle, WA 98195, USA. **Urbansim: An Integrated Urban Development and Land Cover Change Model.**



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- 5:00-5:15 Obbink, Marion (M.H.) and Jan (J.G.P.W.) Clevers. Centre for Geo-Information, Wageningen University and Research, Wageningen, The Netherlands. **Aggregate sets, a new hierarchical approach to link change processes and complex spatial patterns.**
- 5:15-5:30 Fritsch¹, Uta, Daniel Katzenmaier¹ and Axel Bronstert², ¹Potsdam Institute for Climate Impact Research, Potsdam, Germany; ²Institute for Geo-ecology, University of Potsdam, Potsdam, Germany. **Land-Use Scenarios for Flood Risk Assessment Studies.**

April 28 (Saturday) Afternoon - Concurrent Session #2

Special Session (III_{PM}-2): **Pattern and Process in Aquatic Ecosystems: How patches and networks affect ecosystem function**

Chairpersons: **Lisa Dent and Elena M. Bennett**, Center for Limnology, University of Wisconsin, Madison, WI 53706, USA

Location: Cochise Room (MU Room 212)

- 1:30-1:45 Fisher, Stuart G., Julia Henry, John Schade, and Jill Welter. Department of Biology, Arizona State University, Tempe, AZ 85287, USA. **Challenges of Applying the Concepts and Approaches of Landscape Ecology to Running Waters.**
- 1:45-2:00 Henry, Julia C., S.G. Fisher, J.D. Schade, and J.R. Welter. Department of Biology, Arizona State University, Tempe AZ 85287, USA. **Periphyton-sandbar edge interactions in an arid-land stream.**
- 2:00-2:15 Schade, John D., Stuart G. Fisher, Julia C. Henry, and Jill, R. Welter. Department of Biology, Arizona State University, Tempe, AZ 85287, USA. **Hydrologic and nutrient exchange between stream and riparian zone in an arid-land watershed.**
- 2:15-2:30 Welter, Jill R., Stuart G. Fisher, Julia C. Henry and John D. Schade. Department of Biology, Arizona State University, Tempe, AZ 85287, USA. **Nutrient transport and processing in the uplands and intermittent drainage network: linking terrestrial and aquatic ecosystems.**
- 2:30-2:45 **COFFEE BREAK**



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- 2:45-3:00 Weller, Donald E., Thomas E. Jordan, and David L. Correll. Smithsonian Environmental Research Center, Edgewater, MD 21037, USA. **Effects of riparian buffer configuration on nutrient inputs to streams.**
- 3:00-3:15 Findlay¹, Stuart, Nina Caraco¹, Jonathon Cole¹, William Nieder², and David Strayer¹. ¹Institute of Ecosystem Studies, Box AB, Millbrook, NY 12545, ²Hudson River National Estuarine Research Reserve, Annandale, NY 12504. **Functioning of submersed vegetation patches in the tidal freshwater Hudson River.**
- 3:15-3:30 Johnson, Lucinda B., Natural Resources Research Institute, University of Minnesota, Duluth, MN 55811, USA. **Influence of landscape versus local scale factors on wood in low gradient streams.**
- 3:30-3:45 Swanson¹, Frederick J., Sherri L. Johnson², Kai U. Snyder³, and Steven A. Acker⁴. ¹USDA Forest Service, Forestry Sciences Lab, Corvallis, OR 97331, USA; ²Department of Fisheries and Wildlife, Oregon State University, Corvallis, OR 97331, USA; ³E&S Environmental, 2162 NW Fillmore Ave, Corvallis, OR 97330, USA; and ⁴National Park Service, 909 First Ave, Seattle, WA 98104, USA. **Disturbance of Aquatic and Riparian Systems in a Mountain River Network.**
- 3:45-4:00 Pringle, Catherine, Elizabeth Anderson, Effie Greathouse, and James March. Institute of Ecology, University of Georgia, Athens, GA 30606, USA. **How do different spatial patterns of disturbance along stream networks affect ecosystem function?**
- 4:00-4:15 COFFEE BREAK**
- 4:15-4:30 Kratz¹, Tim K., Thomas R. Hrabik¹, John J. Magnuson¹, and Katherine E. Webster^{1,2}. ¹Center for Limnology, University of Wisconsin, Madison, WI 53706, USA; ²Wisconsin Department of Natural Resources, 1350 Femrite Dr., Monona, WI 53716, USA. **The Role of Landscape Position in Lake Structure and Dynamics.**
- 4:30-4:45 Bradshaw, Gay A., and Marie-Josée Fortin². ¹National Centre for Ecological Analysis and Synthesis and USDA, Forest Service, Santa Barbara, California 93101 and ²School of Resource and Environmental Management, Simon Fraser University, Burnaby, B.C., Canada V5A 1S6. **Considerations of landscape heterogeneity effects on scaling and monitoring of aquatic networks.**
- 4:45-5:15 Summary and Discussion led by Lisa Dent and Elena M. Bennett



April 28 (Saturday) Afternoon - Concurrent Session #3

Regular Session Disturbance and Vegetation Pattern and Dynamics

(III_{PM}-3):

Chairperson: **Louis Iverson**¹ (1:30 - 2:30 pm) and **Janet Franklin**², (2:45 - 5:00 pm),
¹USDA Forest Service, Northeastern Research Station, Delaware, OH 43015, USA; ²Department of Geography, San Diego State University, San Diego, CA 92182, USA

Location: Alumni Room (MU Room 202)

- 1:30-1:45 Franklin, Janet. Department of Geography, San Diego State University, San Diego, CA 92182-4493, USA. **Simulating the effects of altered fire regimes on plant succession in the shrublands and forests of Southern California using LANDIS.**
- 1:45-2:00 Howe, Elisabeth Bartlett and William L. Baker. Department of Geography and Recreation, University of Wyoming, Laramie, WY 82071, USA. **Disturbance Interactions and Severe Blowdown in a Rocky Mountain Subalpine Forest Landscape.**
- 2:00-2:15 Ehle, Donna S. and William L. Baker, Department of Geography and Recreation, University of Wyoming, Laramie, WY 82071, USA. **Influence of the Spatial Distribution of Pre-European Disturbance Events on Ponderosa Pine Age Structure in Rocky Mountain National Park, USA.**
- 2:15-2:30 Lindemann, Jeremiah D. and William L. Baker. Department of Geography and Recreation, University of Wyoming, Laramie, WY 82071, USA. **GIS analysis of factors influencing blowdown in a Rocky Mountain landscape.**
- 2:30-2:45 COFFEE BREAK**
- 2:45-3:00 Iverson, Louis R., and Todd F. Hutchinson. USDA Forest Service, Northeastern Research Station, Delaware, OH 43015, USA. **The effects of prescribed fire on soil temperature and moisture, litter consumption, and sapling topkill across a forested landscape in Ohio.**
- 3:00-3:15 Beaty, R. Matthew and Alan H. Taylor. Department of Geography, The Pennsylvania State University, University Park, PA 16802, USA. **Stand and Landscape Scale Variability of Fire Effects and Vegetation Dynamics in a Mixed Conifer Forest Landscape, Southern Cascades, California.**
- 3:15-3:30 ~~Curtin, Charles, G. Arid Lands Project, Box 29, Animas, NM. 88020. Long-~~



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~~term experimental studies of the interaction of herbivory, fire, and climate in the US./ Mexico borderlands.~~ (CANCELLED)

- 3:30-3:45 Wilmer, Henry. The Wilderness Society, Center for Landscape Analysis, 1424 4th Ave. Suite 816, Seattle, WA 98101, USA. **Effects of Fire and Logging on Landscape Structure in the Greater Yellowstone Ecosystem.**
- 3:45-4:00 Andison, David W. Bandaloop Landscape-Ecosystem Services, 3426 Main Ave., Vancouver, BC, Canada, V3H 4R3. **Fire in riparian zones: The perfect hierarchical model.**
- 4:00-4:15 COFFEE BREAK**
- 4:15-4:30 Skinner¹, Carl N., and Scott L. Stephens². ¹US Forest Service, Pacific Southwest Research Station, 2400 Washington Ave., Redding, CA 96001; ²College of Natural Resources, Department of Environmental Science, Policy, and Management, University of California, Berkeley, CA. **Changes in fire regimes in mixed conifer forests of the Sierra San Pedro Martir, Baja California, Mexico.**
- 4:30-4:45 Franklin¹, Scott, Amy Webbeking¹ and John Kupfer². ¹Department of Biology, University of Memphis, Memphis, TN 38152, USA; ²Department of Geography and Regional Development, University of Arizona, Tucson, AZ 85721, USA. **The Effects of Landscape Structure on Plant Regeneration Patterns in Shifting Cultivation Fields Near Indian Church, Belize.**
- 4:45-5:00

April 28 (Saturday) Afternoon - Concurrent Session #4

Regular Session Land Use Planning and Landscape Architecture

(III_{PM}-4):

Chairperson: **Frederick Steiner**, School of Planning and Landscape Architecture, Arizona State University, Tempe, AZ 85287, USA

Location: Mohave Room (MU Room 222)

- 1:30-1:45 Dalton, Deborah W. Division of Landscape Architecture, University of Oklahoma, Norman, OK, 73019, USA. **Eco-Revelatory Design: A Cautionary Tale of Two Designs in the City.**
- 1:45-2:00 Kosek, Sandra E. and Joan Iverson Nassauer. Department of Landscape



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Architecture, School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI 48109, USA. **Scale Influences on the Perception of Landscapes Designed for Ecological Function.**

2:00-2:15

~~Canzonieri, Carmela. Faculty of Environmental Studies, York University, Toronto ON, Canada. **Reinforcing the ecological structure to artificial infrastructure ratio in suburban/rural landscapes.**~~

2:15-2:30

Nassauer, Joan Iverson and Robert C Corry*. School of Natural Resources and Environment, University of Michigan, Ann Arbor, MI 48109-1115, USA. **A GIS-Based Spatial Model of Cultural Landscape Preferences for Alternative Agricultural Landscape Scenarios.**

2:30-2:45

COFFEE BREAK

2:45-3:00

Harris, Virginia. Department of Agricultural and Consumer Economics, University of Illinois Urbana-Champaign, Urbana, IL 61801, USA. **Using Remote Sensing Data to Estimate the Value of Open Space in the Chicago Metropolitan Area.**

3:00-3:15

Swaffield, Simon R. Environmental Management and Design Division, Lincoln University, Canterbury, New Zealand. **Society, Culture and Landscape Ecology: Connections and Tensions.**

3:15-3:30

Willems, Geert P.A., Wim G.M. van der Knaap, and Catharinus F. Jaarsma*. Department of Environmental Sciences, Land Use Planning Group, Wageningen University, Generaal Foulkesweg 13, 6703 BJ Wageningen, The Netherlands. **Planning within heterogeneous landscapes: Confronting the patterns of movement and processes in time and space of man and animal.**

3:30-3:45

Skabelund, Lee R. Department of Landscape Architecture, Virginia Polytechnic Institute & State University, Blacksburg, Virginia 24061, USA. **Grounding Community Planning/Design with an Understanding of Site and Landscape Ecology: Learning from the Brown Farm Park Master Planning Process - Blacksburg, Virginia.**

3:45-4:00

Ewan¹, Joseph M., and James P. Burke². ¹School of Planning and Landscape Architecture, Arizona State University, Tempe, Arizona, USA; ²Parks, Recreation and Library Department, City of Phoenix, Phoenix, Arizona, USA. **The Sonoran Preserve Master Plan: Integration of Landscape Ecology with the Design and Planning of Open Space.**

4:00-4:15

COFFEE BREAK



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- 4:15-4:30 Moutat¹, David, Carl Steinitz², Robert Anderson³, Hector Arias⁴, Scott Bassett², Mary Cablk¹, Michael Flaxman², Tomas Goode⁵, Robert Lozar⁶, Thomas Mattock, III⁵, Winifred Rose⁶, Richard Peiser², and Allan Shearer². ¹Desert Research Institute, Reno, NV 89512, USA; ²Department of Landscape Architecture, Harvard University, Cambridge, MA 02138, USA; ³Environmental Division, U.S. Army Training and Doctrine Command, Fort Monroe, VA 23651, USA; ⁴Gabinete de Estudios Ambientales, A.C., Hermosillo, Sonora, Mexico; ⁵Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ 85721; and ⁶U.S. Army Construction Engineering Research Laboratory, Champaign, IL 61862, USA. **Alternative Futures of the Upper San Pedro River Watershed, Arizona and Sonora: Politics of Landscape Change.**
- 4:30-4:45 Steinitz¹, Carl, David Moutat², Robert Anderson³, Hector Arias⁴, Scott Bassett¹, Mary Cablk², Michael Flaxman¹, Tomas Goode⁵, Robert Lozar⁶, Thomas Maddock, III⁵, Winifred Rose⁶, Richard Peiser¹, and Allan Shearer¹. ¹Department of Landscape Architecture, Harvard University, Cambridge, MA 02138, USA; ²Desert Research Institute, Reno, NV 89512, USA; ³Environmental Division, U.S. Army Training and Doctrine Command, Fort Monroe, VA 23651, USA; ⁴Gabinete de Estudios Ambientales, A.C., Hermosillo, Mexico; ⁵Department of Hydrology and Water Resources, University of Arizona, Tucson, AZ 85721, USA; ⁶U.S. Army Construction and Engineering Research Laboratory, P.O. Box 9005, Champaign, IL 61826, USA. **Alternative Futures of the Upper San Pedro River Watershed, Arizona and Sonora: A Modeling Approach.**
- 4:45-5:00 Mohamed, AbuBakr AbdelAziz. Crop, Soil and Water Sciences Division, International Rice Research Institute, P. O. Box 3127, MCPO1271 Makati City, Philippines. **Modeling spatial heterogeneity for planning land use in rainfed environment.**
- 5:00-5:15 Ismail, Nafeesa Ahmed and AbuBakr AbdelAziz Mohamed. Crop, Soil and Water Sciences Division, International Rice Research Institute, P. O. Box 3127, MCPO1271 Makati City, Philippines. **Farm aggregation and scaling for land use planning: methodology and application.**



April 28 (Saturday) Afternoon - Concurrent Session #5

Regular Session Landscape Pattern and Population Processes

(III_{PM}-5):

Chairpersons: **Henriette Jager**¹ (1:30-2:30 pm) and **David Howerter**² (2:45-5:00pm), ¹Oak Ridge National Laboratory, Oak Ridge, TN, USA; ²Institute for Wetland and Waterfowl Research, Ducks Unlimited Canada, Stonewall, MB, R0C 2Z0, Canada

Location: La Paz Room (MU Room 223)

1:30-1:45 Jager¹, Henriette, Jim Chandler², Ken Lepla², Annett Sullivan¹, Webb Van Winkle³. ¹Oak Ridge National Laboratory, Oak Ridge, TN, USA, ²Idaho Power Co., Boise, ID, USA; ³Environmental consultant, Boise, ID, USA. **A simulation study of how dams influence white sturgeon populations at three spatial scales.**

1:45-2:00 Lee¹, Pey-Yi, Tom Scott^{1,2}. ¹Department of Earth Sciences, University of California, Riverside, CA 92521, USA; ²Department of Environmental Science, Policy, and Management. University of California, Berkeley, CA 94720, USA. **Hierarchical pattern of spatial structure of Loggerhead Shrike at different scales.**

2:00-2:15 Springborn¹, Elizabeth G., and David S. Maehr². ¹Departments of Animal Science and Forestry, University of Kentucky, Lexington, KY 40503, U.S.A.; ²Department of Forestry, University of Kentucky, Lexington, KY 40503, U.S.A. **Conduits, filters, and barriers to elk movement in a heterogeneous landscape in eastern Kentucky.**

2:15-2:30 McPherson, A. Michelle, and Philip D. Taylor. ACWERN, Department of Biology, Acadia University, Wolfville, NS B0P 1X0, Canada. **Effects of Landscape Change and Forest Regeneration on Peatland Dragonflies (Odonata) in Western Newfoundland.**

2:30-2:45 COFFEE BREAK

2:45-3:00 Howerter^{1,2}, David, Jay J. Rotella², James H. Devries¹, Robert B. Emery¹, Brian L. Joynt¹, Llwellyn M. Armstrong¹, and Michael G. Anderson¹. ¹Institute for Wetland and Waterfowl Research, Ducks Unlimited Canada, Stonewall, MB, R0C 2Z0, Canada; and ²Department of Ecology, Montana State University, Bozeman, MT 59717, USA. **Landscape attributes predict hatching rates: Effects of classification and scale.**



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- 3:00-3:15 Smith¹, Eric L., and Drew McMahan². ¹Forest Health Technology Enterprise Team, USDA Forest Service, Fort Collins, CO 80526, USA; ²Intecs International, Fort Collins, CO 80526, USA. **An Integrated System to Model and Display Bark Beetle and Management Impacts on a Forest Landscape.**
- 3:15-3:30 Frank, Karin. Department of Ecological Modelling, UFZ - Centre for Environmental Research Leipzig-Halle, D-04301 Leipzig, Germany. **An index for assessing habitat networks from the perspective of metapopulation viability.**
- 3:30-3:45 Brandwine, Shlomo. Life Sciences Department, Ben-Gurion University of the Negev, Israel. **Binding ideas in the response of populations to the dynamics of landscape mosaics.**
- 3:45-4:00 Guo, Linhai Larry, John Morrison, and John Marthick. Environmental Research Institute, University of Wollongong, NSW 2522, Australia. **Multi-scale Analysis of Landscape Connectivity in Kangaroo Valley, NSW Southeastern Australia in the Context of Landscape Ecology.**
- 4:00-4:15 COFFEE BREAK**
- 4:15-4:30 Tluk v. Toschanowitz¹, Katharina, Timothy J. Roper², Karin Frank³. ¹Institute of Environmental Systems Research, University of Osnabrueck, D-49076 Osnabrueck, Germany; ²School of Biological Sciences, University of Sussex, Brighton BN1 9QG, Great Britain; ³Department of Ecological Modelling, UFZ - Centre for Environmental Research Leipzig-Halle, D-04318 Leipzig, Germany. **Assessing the effect of traffic on different hierarchical levels of population ecology: Lessons from an individual-based model.**
- 4:30-4:45 Gruber¹, Bernd, Klaus Henle¹, Karin Frank². ¹Department of Conservation Biology and Natural Resources, UFZ - Centre for Environmental Research Leipzig-Halle, D-04318 Leipzig, Germany; and ²Department of Ecological Modelling, UFZ - Centre for Environmental Research Leipzig-Halle, D-04318 Leipzig, Germany. **Movement models as tools for analyzing the effect of landscape structure on population processes.**
- 4:45-5:00 Wilkerson, Cynthia R. Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, FL 32611, USA. **Isolated Temporary Wetlands as Prey Refugia for Anuran Communities.**
- 5:00-5:15 Foltete, Jean-Christophe, and Didier Josselin. THEMA, 32 rue Megevand, 25030 Besancon Cedex. **Using spatio-temporal co-occurrence matrices to delineate spatial patterns about vole swarming.**



April 28 (Saturday) Poster Session (8:00am - 5:30pm)

Place: Arizona Ballroom (Room 207)
Set-up time: 7:30am - 8:00am
Duration: 8:00am - 5:30pm
Author Available for questions: 11:00am - 12:15pm and 4:00pm - 5:30 pm

Landscape Pattern and Population Dynamics and Species Distribution

- P#II-1** Baum¹, Kristen A., William L. Rubink², and Robert N. Coulson¹. ¹Department of Entomology, Texas A&M University, College Station, TX 77843, USA; ²Beneficial Insects Research Unit, Agricultural Research Service, United States Department of Agriculture, Weslaco, TX, USA. **Habitat associations of feral honey bees and non-*Apis* pollinators in South Texas.**
- P#II-2** Butaye, Jan, Hans Jacquemyn, and Martin Hermy. Department of Land and Water Management, University of Leuven, Vital Decosterstraat 102, B-3000 Leuven, Belgium. **Differential colonization causing non-random forest plant species community structure in a fragmented agricultural landscape.**
- P#II-3** Henebry, Geoffrey, Brian Putz, and James Merchant. Center for Advanced Land Management Information Technologies (CALMIT), University of Nebraska, Lincoln, NE 68588-0517, USA. **Modeling Herpetile Range Distributions from Species Occurrences and Landscape Variables.**
- P#II-4** Jacquemyn, Hans, Jan Butaye, and Martin Hermy. Department of Land and Water Management, University of Leuven, Vital Decosterstraat 102, B-3000 Leuven, Belgium. **Spatio-temporal effects of forest fragmentation on plant species composition in mixed deciduous forest patches.**
- P#II-5** Katti, Madhusudan and Eyal Shochat. Central Arizona - Phoenix Long-Term Ecological Research Project and Center for Environmental Studies, Arizona State University, Tempe, AZ 85287, USA. **Phoenix Or Tucson - Does Landscape Determine Where Abert's Towhees Choose To Live?**
- P#II-6** Laurent¹, E.J., and Bruce Kingsbury. Center for Reptile and Amphibian Conservation and Management and the Department of Biology, Indiana-Purdue University, Fort Wayne, IN 46805-1499, USA; ¹Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI 48824-1222, USA. **Validation and Nullification of a Predictive Model for Habitat Context: the Effects of Location and Landcover Classification.**



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- P#II-7** Pinto¹, M. A., K. Baum¹, W. Rubink², S. Johnston¹, R. N. Coulson¹. ¹Knowledge Engineering Laboratory, Department of Entomology, Texas A&M University, College Station, TX, USA; ²USDA/ARS, Weslaco, TX, USA. **Spatial and Temporal Patterns of Mitochondrial DNA in Feral Honey Bees: Impact of Africanization.**
- P#II-8** Seagle, Steven W., Brian R. Sturtevant, Robert A. Chastain, and Philip A. Townsend. Appalachian Laboratory, University of Maryland Center for Environmental Science, Frostburg, MD 21532, USA. **Spatial variation of forest-floor litter invertebrates in topographically diverse landscapes.**
- P#II-9** Stralberg, Diana, Nadav Nur, and Hildie Spautz. Point Reyes Bird Observatory, 4990 Shoreline Highway, Stinson Beach, CA 94970, USA. **Landscape-level Influences on Breeding Songbirds in San Francisco Bay Tidal Marshes.**
- P#II-10** Wunneburger¹, D. F., R. N. Coulson², S. T. O'Keefe², and S. B. Vinson². ¹GeoInformatics Studio, College of Architecture, Texas A&M University, College Station, TX 77843, USA; ²Knowledge Engineering Laboratory, Department of Entomology, Texas A&M University, College Station, TX 77843, USA. **Hazard and Risk Rating Post Oak Savanna Landscapes for the Red Imported Fire Ant.**

Landscape Conservation, Management and Design

- P#II-11** Anderson, Linda, and Theodore Eisenman. Landscape Architecture Department, Cornell University, Ithaca, NY 14853, USA. **Conceptual vision for integrating wetland restoration and tourism development at the Montezuma Wetlands Complex in New York State.**
- P#II-12** Bestelmeyer¹, Brandon, Joel Brown¹, Kris Havstad¹, Robert Alexander², and George Chavez³, and Jeffrey Herrick¹. ¹ USDA-ARS Jornada Experimental Range, New Mexico State University, Las Cruces, NM, 88003, ² Bureau of Land Management, 1474 Rodeo Rd., Santa Fe, NM 87502; ³ USDA Natural Resources Conservation Service, 6200 Jefferson, Albuquerque, NM 87109. **An integrated approach to managing landscape pattern and dynamics in southern New Mexico.**
- P#II-13** DeFee II, Buren B., Douglas Wunneburger, Department of Landscape Architecture and Urban Planning, Texas A&M University, College Station, TX 77840, USA. **Integrating Stakeholder Concerns Into Open Space Planning Decisions.**
- P#II-14** Drummond¹, Mark A., Raymond D. Watts², Roger Compton³. ¹ USGS, MESC, 4512 McMurry Ave., Fort Collins, CO 80525; ² USGS/CIRA, Colorado State Univ. Foothills Campus, Fort Collins, Colorado 80523; ³ USGS, RMMC, Box 25046, MS516, Denver, CO 80225, USA. **Temporal Effects of Human Influence on Rural Landscape Pattern and Wildlife Habitat in Teton County, Wyoming.**



- P#II-15** Flamm¹, R. O.*, Alexander Smith¹, Suzanne Tarr¹, Susan Jacobson², and Sampreethi Aipanjiguly². ¹Florida Marine Research Institute, Department of Environmental Protection, St. Petersburg, Florida. ²Department of Wildlife Ecology and Conservation, University of Florida, Gainesville, Florida, USA. **Manatee 'places' in and around Tampa Bay Florida.**
- P#II-16** Fraser, John. Science Development and Technology Branch Ontario Ministry of Natural Resources, Peterborough, Ontario, Canada K9J 8M5. **Landscape Ecology approaches to the protection of natural heritage features and the sustainable management of mineral aggregate resources, Oak Ridges Moraine, Ontario Canada.**
- P#II-17** Harden¹, Charles, and Matthew Nicholson². ¹Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, Illinois 62901-6504, USA; ²Cooperative Wildlife Research Laboratory, Southern Illinois University, Carbondale, Illinois 62901-6504, USA. **Impacts of Human Development on Deer Herd Management in the Ex-urban Landscape.**
- P#II-18** Johnson, Alan R. and Karen M. Eisenreich. Department of Environmental Toxicology, Clemson University, Pendleton, SC, 29670, USA. **Integrating Landscape Ecology into Ecological Risk Assessment.**
- P#II-19** Ng, Evelyn. Department of Geography & Recreation, University of Wyoming, Laramie, WY 82071, U.S.A. **Environmental Policies for Solar Energy Use in a Closed Micro-Business System.**
- P#II-20** Paranjape, Anagha. School of Planning and Landscape Architecture, Arizona State University, Tempe, AZ 85287, USA. **Adaptation of Visual Resource Management (VRM) Systems for the Visual Quality Assessment of Urban-Natural Landscapes.**
- P#II-21** Rubino, Matt J., Terri J. King and George R. Hess. North Carolina State University, Forestry Department, Raleigh NC 27695-8002 USA. **A Focal Species Approach to Wildlife Planning.**
- P#II-22** Sun-Kee Hong¹, In-Ju Song², Eun-Kyong Lee¹, Do-Won Lee³, and Ji-Hae Shin²
¹Environmental Planning Institute, Seoul National University, Seoul 151-742, Korea; ²Seoul Development Institute, Seoul 100-250, Korea; and ³Graduate School of Environmental Studies, Seoul National University, Seoul 151-742, Korea. **Changes in landscape pattern and their effects on ecosystem functions in the Seoul area: Guidelines for urban landscape conservation and ecological planning.**
- P#II-23** Vanucchi-Hartung, Jamie. Department of Landscape Architecture, Cornell



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University, Ithaca, NY 14850, USA. **Landscapes, Process and Time: Past and Future in the Present.**

- P#II-24** Yamashita, Sampei. Department of Civil Engineering, Kyushu Sangyo University, Fukuoka, Japan. **Attractiveness of a Wooded River Landscape and Changes in its Colors in the Daytime.**

Vegetation Pattern and Plant-Environment Relationships

- P#II-25** Allen¹, Thomas, and John Kupfer². ¹Department of Political Science & Geography, Old Dominion University, Norfolk, VA 23529, USA; and ²Department of Geography and Regional Development, University of Arizona, Tucson, AZ 85721, USA. **Scales of pattern and process in Fraser fir forest disturbance and fegeneration, Great Smoky Mountains, USA.**
- P#II-26** Bean, David A., and Greg H.R. Henry. Department of Geography, University of British Columbia, Vancouver, BC, Canada, V6T 1Z2. **The Spatial Pattern of Vegetation in a High Arctic Oasis.**
- P#II-27** Hooten¹, Mevin B., David R. Larsen², and Christopher K. Wikle². ¹Department of Forestry, University of Missouri, Columbia, MO 65211, USA; ²Department of Forestry, University of Missouri, Columbia, MO 65211, USA. **Modeling and mapping the distribution of legumes in the Missouri Ozarks: A Bayesian Approach.**
- P#II-28** Zhang, Huayong. Center of Eco-Environmental Sciences and Institute of Botany, Chinese Academy of Sciences, Beijing, P. R. China. **Vegetation Pattern and Climatic Conditions: A Statistical Thermodynamics Theory.**
- P#II-29** Ki-Hwan Cho^{1*}, Do-Soon Cho¹ and Sun-Kee Hong². ¹Department of Environmental Sciences, The Catholic University of Korea, Puchon, Korea; and ²Environmental Planning Institute, Seoul National University, Seoul, Korea. **Landscape ecological functions of mountain ridges between a bioreserve and its neighboring forest in the Kwangnung area, Korea.**
- P#II-30** Marshall, Treneice and Jiquan Chen. School of Forestry and Wood Products, Michigan Technological University, Houghton, MI 49931, USA. **Contribution of wetland ecotones on vascular plant diversity within a northern hardwood landscape.**
- P#II-31** Mast¹, Joy N. and Lawrence E. Stevens², ¹Department of Geography and Public Planning and ²Department of Biological Sciences, Northern Arizona University, Flagstaff, AZ 86011, USA. **Dendroecological study of black cottonwood dynamics along regulated and unregulated rivers in British Columbia.**



- P#II-32** Pierce, Kenneth B., Todd Lookingbill, and Dean Urban. Nicholas School of the Environment, Duke University, Durham, NC 27708, USA. **An Assessment of Proximate Climate Variables and their Relative Impact of Vegetation Patterns in Montane Systems.**
- P#II-33** Powell¹, Scott L., Andrew J. Hansen¹, and Rick L. Lawrence². ¹Ecology Department, Montana State University, Bozeman, MT 59717, USA; ²Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT 59717, USA. **Monitoring Forest Response to Past and Future Global Change in the Greater Yellowstone Ecosystem.**

Disturbance and Landscape Pattern Interactions

- P#II-34** Fleming¹, Richard A., and Jean-Noël Candau². ¹Great Lakes Forest Research Centre, Canadian Forest Service, Sault Ste. Marie, ON, P6A 5M7, CANADA; ²Ontario Forest Research Institute, Ontario Ministry of Natural Resources, Sault Ste. Marie, ON, P6A 5N5, CANADA. **Pattern and Process in the Interaction of Spruce Budworm and Wildfire Disturbance Regimes at Landscape Scales.**
- P#II-35** Kashian¹, Daniel M. and Monica G. Turner². ¹Departments of Zoology and Forest Ecology and Management, University of Wisconsin, Madison, WI 53706, USA; ²Department of Zoology, University of Wisconsin, Madison, WI 53706, USA. **The persistence of landscape legacies following catastrophic fire in Yellowstone National Park.**
- P#II-36** Peters, D.P.C. Jornada Experimental Range, Las Cruces, NM 88003. **Landscape-scale consequences of small-scale disturbances at a grassland-shrubland ecotone.**
- P#II-37** Schoennagel¹, Tania, Monica G. Turner², and William H. Romme³. ¹Depts.of Botany and Zoology, University of Wisconsin, Madison, WI, USA; ²Dept. of Zoology, University of Wisconsin, Madison, WI, USA; ³Dept. of Biology, Fort Lewis College, Durango, CO, USA. **Spatial and temporal influences of fire regimes on initial pathways of succession across the Yellowstone landscape.**
- P#II-38** Wolf, Joy J. Department of Geography, University of Wisconsin – Parkside, Kenosha, WI 53141, USA. **Effects of Prescribed Burning as a Control for Exotic Invasion in Rocky Mountain National Park Grasslands.**



April 29 (Sunday) Full-Day Field Trip

GRAND CANYON via SEDONA

Pickup at the hotels by the bus:

6:30 AM Holiday Inn

6:45 AM Twin Palms Hotel

7:00 AM Marriott Courtyard

Arrival back at Tempe: approximately 9 PM

Due to numerous requests, we have arranged a field trip to the South Rim of the Grand Canyon via the spectacular red rock country of Sedona. The trip is definitely a full day, but you will see some of the most scenic areas of Arizona. The route to the South Rim will pass through five biomes: Arizona Upland Sonora Desertscrub, Interior Chaparral, Juniper-Pinyon Woodland, Petran Montane Conifer Forest, and Great Basin Desertscrub. You will stop in Sedona for a coffee break and continue to the South Rim via Oak Creek Canyon and Flagstaff. You will spend several hours at the South Rim before heading back to Phoenix. A professional guide will provide narration during the trip.